

DISTRICT OF COLUMBIA

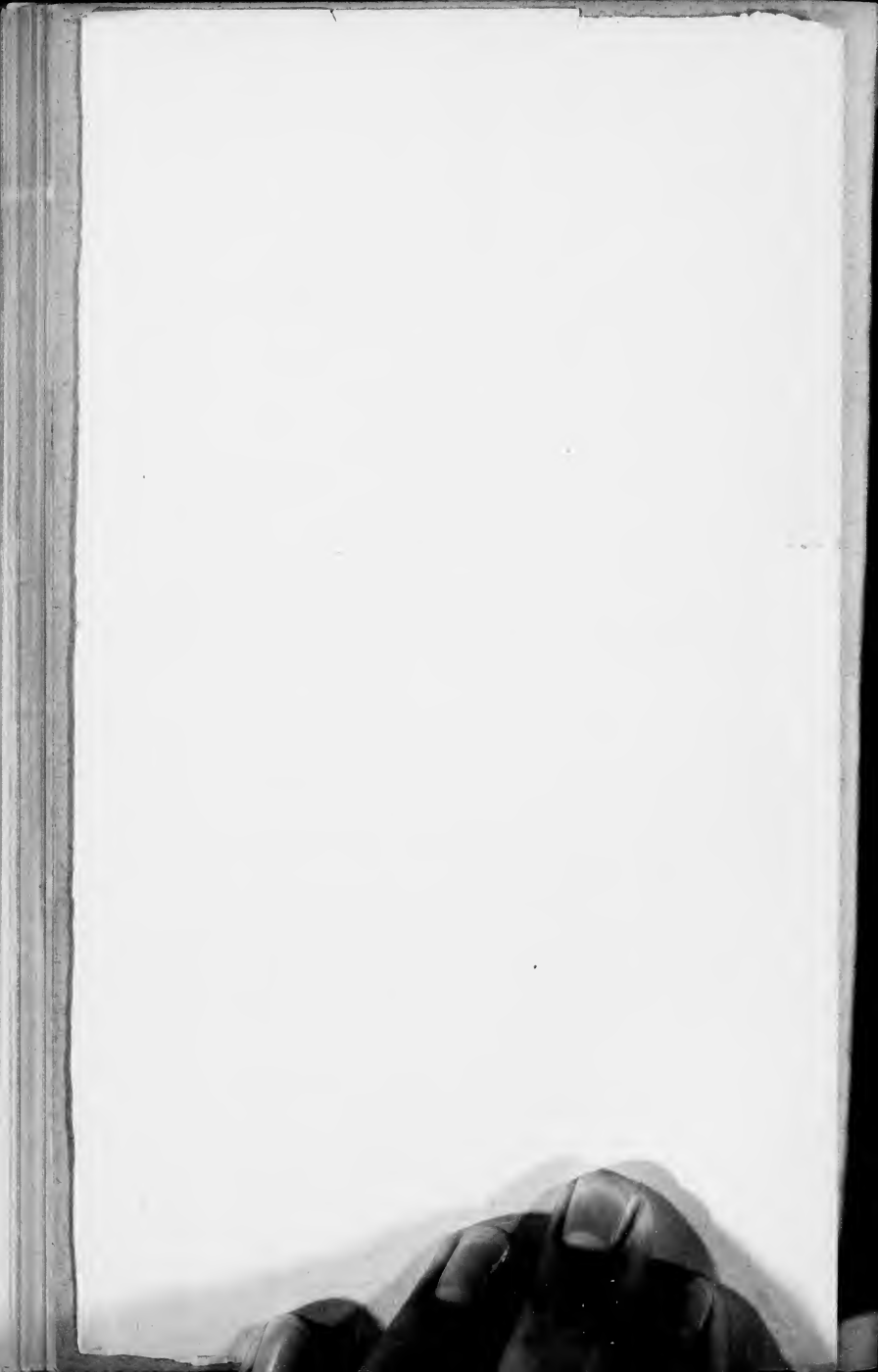
THE OPERATIONS OF THE
ENGINEER DEPARTMENT
DISTRICT OF COLUMBIA

YEAR ENDED JUNE 30, 1928

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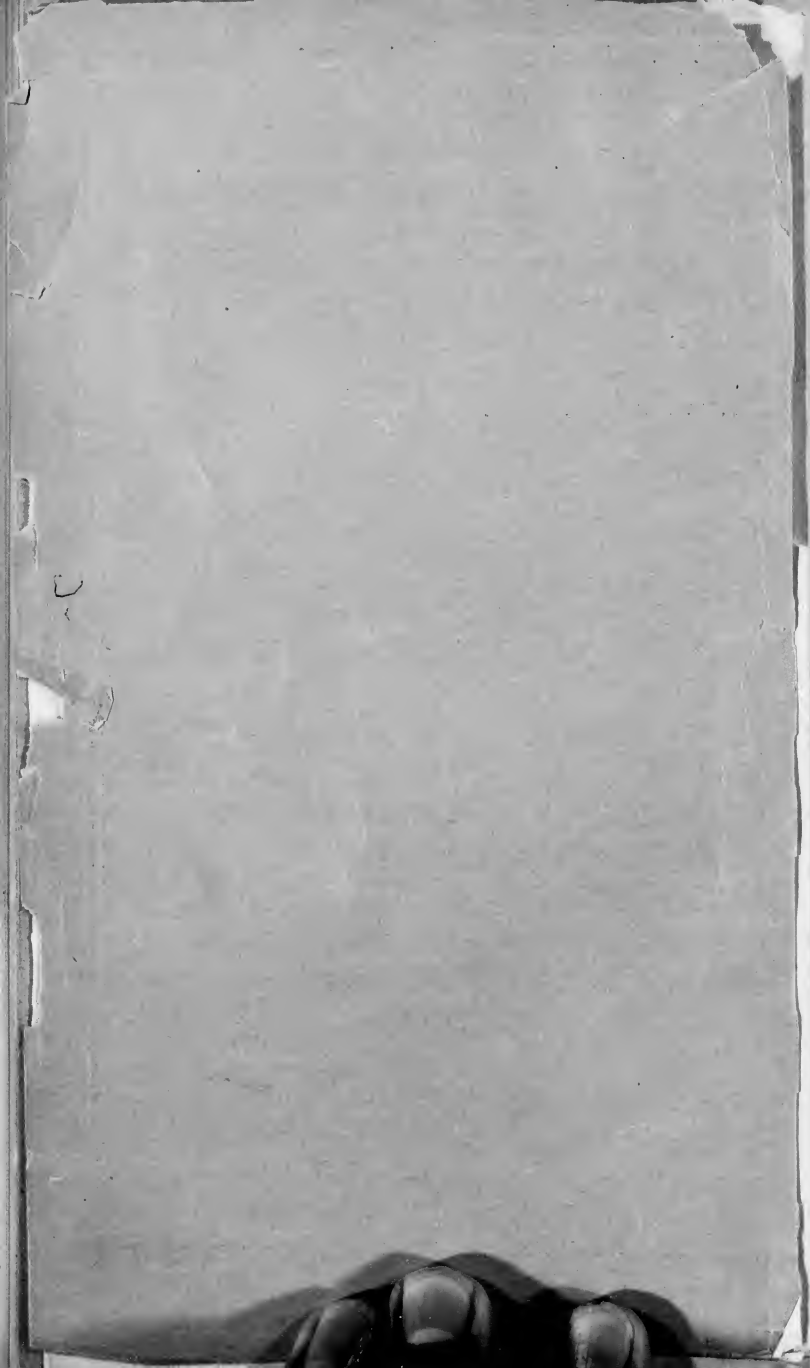


**REPORT OF THE
COMMISSIONERS OF THE
DISTRICT OF COLUMBIA
FOR YEAR ENDED JUNE 30, 1928**

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REPORT
OF THE OPERATIONS OF THE
ENGINEER DEPARTMENT
OF THE DISTRICT OF COLUMBIA

FOR THE YEAR ENDED
JUNE 30
1928

UNDER THE DIRECTION OF
COLONEL WILLIAM B. LADUE

Corps of Engineers, United States Army
Engineer Commissioner, District of Columbia



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1928

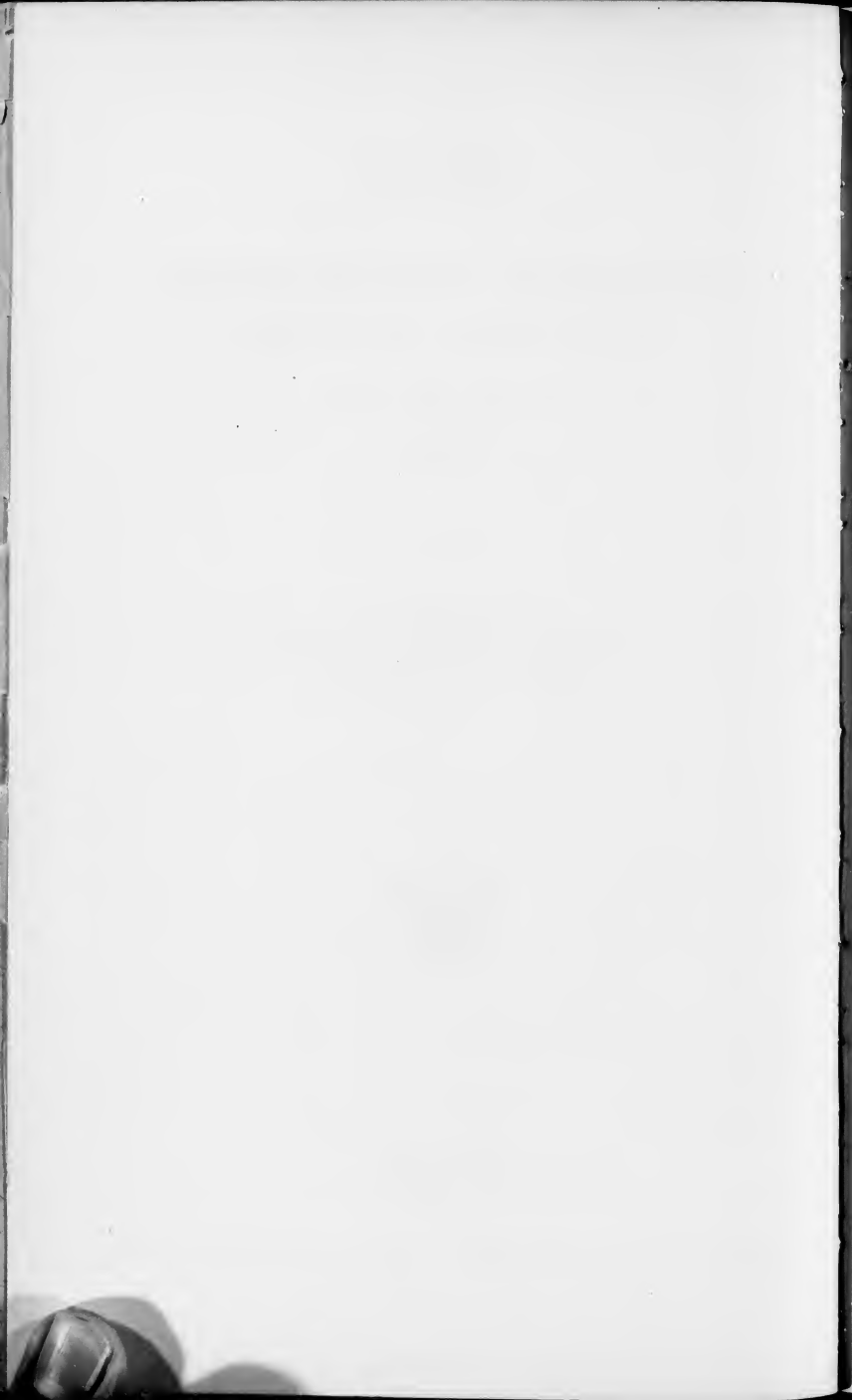


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ORGANIZATION OF THE ENGINEER DEPARTMENT, DISTRICT OF COLUMBIA

Col. WILLIAM B. LADUE, *Corps of Engineers, United States Army, Engineer Commissioner.*
Maj. DONALD A. DAVISON, *Corps of Engineers, United States Army, Assistant.*
Maj. LAYSON E. ATKINS, *Corps of Engineers, United States Army, Assistant.*
Capt. HERBERT C. WHITEHURST, *Corps of Engineers, United States Army, Assistant.*

UNDER THE IMMEDIATE SUPERVISION OF THE ENGINEER COMMISSIONER

CONTRACT BOARD:
ROLAND M. BRENNAN, *Chairman.*
DISTRICT BUILDING:
Maj. LAYSON E. ATKINS, *Superintendent.*
RECORD DIVISION:
ROLAND M. BRENNAN, *Chief Clerk.*
SEWER CONSTRUCTION AND MAINTENANCE:
J. B. GORDON, *Sanitary Engineer.*
WATER DISTRIBUTION AND REVENUES:
J. S. GARLAND, *Superintendent.*
E. H. GROVE, *Water Registrar.*
WHARF COMMITTEE:
ROLAND M. BRENNAN, *Chairman.*
CLIFFORD R. WHYTE, *Engineer of Bridges.*
WILLIAM P. HESS, *Harbor Master.*
ZONING COMMISSION:
Maj. DONALD A. DAVISON, *Executive Officer.*

UNDER THE IMMEDIATE SUPERVISION OF MAJOR DAVISON

ARCHITECTS' ADVISORY COUNCIL.
BUILDING AND PLUMBING INSPECTION:
J. W. OEHMANN, *Inspector of Buildings.*
A. R. MCGONEGAL, *Inspector of Plumbing.*
Plumbing board—
LOUIS CONRADIS.
JAMES S. O'HAGAN.
SAMUEL TAPP.
Board of Examiners of Steam Engineers—
P. M. GREENLAW.
H. BOESCH.
T. S. TINCHER.
Permits, Engineer Department—
H. M. WOODWARD, *Permit Clerk.*
BOARD FOR CONDEMNATION OF INSANITARY BUILDINGS:
Maj. D. A. DAVISON, *Assistant to the Engineer Commissioner.*
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A. S. J. ATKINSON, *Inspector.*
COLLECTION AND DISPOSAL OF CITY REFUSE; STREET AND ALLEY CLEANING:
MOREIS HACKER, *Supervisor.*
T. L. COSTIGAN, *Superintendent of Street Cleaning.*
ELECTRICAL DEPARTMENT:
WARREN B. HADLEY, *Electrical Engineer.*
ZONING.

UNDER THE IMMEDIATE SUPERVISION OF MAJOR ATKINS

AUTOMOBILE BOARD.
CONSTRUCTION, MAINTENANCE AND REPAIR OF MUNICIPAL BUILDINGS:
ALBERT L. HARRIS, *Municipal Architect.*
HENRY STOREY, *Superintendent of Repairs.*
DISTRICT BUILDING.
LAND, PURCHASE OF, AND BUILDING SITES.
PROPERTY MAINTENANCE AND UTILIZATION.
MOTOR TRANSPORT.
MUNICIPAL GARAGE:
E. P. BROOKE, *in Charge.*
CHARLES N. EMMONS, *Superintendent.*

UNDER THE IMMEDIATE SUPERVISION OF CAPTAIN WHITEHURST

HIGHWAY CONSTRUCTION, MAINTENANCE AND REPAIR (streets, roads, bridges, etc.):
C. B. HUNT, *Engineer of Highways.*
J. W. DARE, *Construction Engineer.*
L. P. ROBERTSON, *Deputy Engineer of Highways.*
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Construction and maintenance of suburban roads—
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Construction and maintenance of bridges—
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Asphalts and cements—
V. CLEAVER, *Inspector of Asphalts and Cements.*
SURVEYOR'S OFFICE (including street extensions):
M. C. HAZEN, *Surveyor.*
TREES AND PARKINGS:
CLIFFORD LANHAM, *Superintendent.*

**EXTRACT FROM REPORT OF THE COMMISSIONERS OF THE
DISTRICT OF COLUMBIA FOR THE FISCAL YEAR ENDED
JUNE 30, 1928**

OFFICE OF THE COMMISSIONERS
OF THE DISTRICT OF COLUMBIA,
Washington, December 3, 1928.

*To the Senate and House of Representatives of the United States of
America in Congress assembled:*

The Commissioners of the District of Columbia herewith submit for the information of Congress, pursuant to the requirements of section 12 of an act providing a permanent form of government for the District of Columbia, approved June 11, 1878 (20 U. S. Stats. 108), a report of the official doings of that government for the fiscal year ended June 30, 1928.

ROADWAY PAVEMENTS

The accompanying table shows the area in square yards of new roadway pavements laid and old roadway pavements resurfaced during the year, with the total in square yards and miles of the various kinds of pavements at the close of the fiscal year.

Comparative statement showing character and extent of roadway pavements

	Existing amount on June 30, 1927		New pavements laid during year (square yards)	Pavements replaced during year (square yards)	Existing amount on June 30, 1928	
	Square yards	Miles			Square yards	Miles
Sheet asphalt and coal tar.....	3,567,658	190.44	32,988	{ 1 5,138 2 32,988	3,595,508	191.77
Asphalt block.....	593,991	29.94		3 28,409	532,594	26.94
Asphaltic surface.....	221,886	14.03	4 43,850		265,736	16.86
Amiesite.....			5 5,931		5,931	23
Durax block.....	31,679	1.13			31,679	1.13
Asphaltic or bituminous concrete:						
On concrete base.....	76,302	4.28			76,302	4.28
On stone base.....	38,909	2.16			38,909	2.16
Cement concrete.....	916,350	49.08	6 269,539	7 4,517	1,181,372	63.08
Granite block or rubble.....	248,856	14.25		8 7,382	241,474	13.76
Vitrified block.....	17,390	1.04			17,390	1.04
Cobble.....	36,374	1.52			36,374	1.52
Macadam (estimated).....	1,598,701	107.41		{ 3 3,542 7 91,442	1,503,717	102.95
Gravel and unimproved (estimated)		175.32				179.83
Gutters on asphalt streets.....	254,313		2,616		256,929	
Pavements maintained by street railways.....	616,807				616,807	
Gutters on asphaltic concrete.....	9,723				9,723	
Total.....	8,228,939	590.60	354,924	173,418	8,410,445	605.55

¹ Replaced with Amiesite.

² Replaced with standard pavement.

³ Replaced with asphalt surface.

⁴ 15,441 of above asphaltic surface is bessonite.

⁵ 793 square yards Amiesite roadway paved under whole cost system.

⁶ 16,705 square yards concrete roadway paved under whole cost system.

⁷ Replaced with cement concrete.

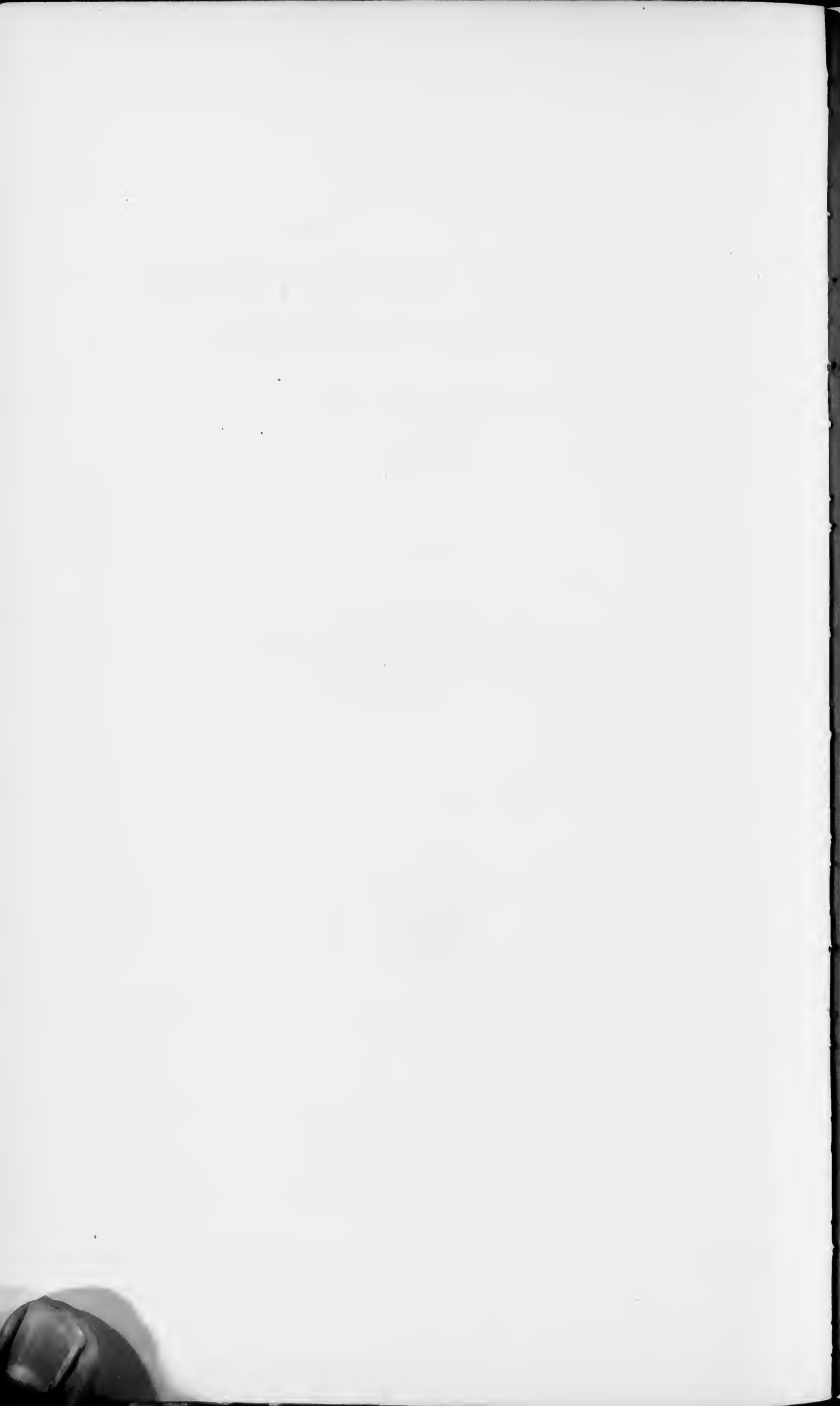


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⁶ 16,705 square yards concrete roadway paved under whole cost system.

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The sums appropriated for expenditures under this head during the year were as follows:

For repairing old roadway pavements, including asphalt resurfacing_	\$900, 000
For paving new roadways.....	194, 100
For repairs to suburban roads.....	310, 000
For grading streets, alleys, and roads.....	50, 000
For paving and repaving roadways under the gasoline-tax road and street fund.....	1, 486, 500

The prices paid under contracts for roadway pavements during the year were as follows:

Laying sheet asphalt pavement (2½-inch asphalt surface, 2-inch binder, before compression, with 6-inch concrete base).....	\$2. 48-\$2. 75
Laying vitrified block gutter with 6-inch concrete base.....	2. 48- 2. 75
Laying 6-inch concrete roadway.....	1. 62- 1. 72

The field of activity of the year's work was well balanced. The average of the asphalt pavements resurfaced was in excess of 31 years—a remarkable endurance record. This latter activity comprised 123 items, about half of which were performed by the heater method. The construction of new roadways comprised 84 items, while there were three major and one small roadway widening items.

SUBURBAN ROADS

The maintenance of these roads under the heavily concentrated loads and increased speed of present-day traffic, in comparison with the conditions which they were designed to meet when built, has proved a heavy financial burden. A stronger road, evolved from the old road as a foundation, or built in place of it on modern design, would be an economical use of funds invested therein.

MUNICIPAL ASPHALT PLANT

During the year the municipal asphalt plant was operated for a period of 251¼ days, with a total output of 211,032 cubic feet of asphaltic material, or an average daily output of 840 cubic feet. For the first time since 1914, when the plant was purchased, bids received during the closing days of the fiscal year for the performance of asphalt repairs to roadways were more economical than the costs of such work by the use of the municipal asphalt plant. As a result thereof, by provision of law in such case, this work will be placed under contract and the plant will be held idle, at least during the 1-year term of such contract.

SIDEWALKS AND ALLEYS

Material reduction in demands for new sidewalks but unchanged conditions as to requests for alley paving was in evidence. Of the fund of \$300,000 for these two fields of paving, by far the larger fraction was required for alley paving due to the increased construction of alley garages. The contract prices for sidewalks were \$2 and \$2.17 for those adjacent to paved roadways and \$2.05 and \$2.23 for those adjacent to unpaved roadways.

BRIDGES

The expenditures from appropriation for construction and repair of bridges amounted to \$40,021.04. The reconstruction of the roadway floor of the Highway Bridge over the Potomac River is now in progress. The Virginia abutment of the Chain Bridge over the Potomac River is now being rebuilt. Preparation of plans and specifications for the construction of a new bridge over Rock Creek at M Street have been completed. Contract was executed for a new bridge over Rock Creek at Military Road.

INSPECTION OF ASPHALTS AND CEMENTS

Chemical and physical tests were made of engineer construction material to the amount of 2,642. Approximately 115,437 barrels of various cements were inspected and issued. The samples of asphalt tested covered 434,220 square yards of bituminous pavement. During the year there were 269,539.75 square yards of concrete roadways laid. Approximately 418,778.99 square yards of asphalt mixtures were laid, 15,441.17 of which were asphalt concrete sand topping mixture (Bessonite).

SURVEYOR'S OFFICE

The work of the surveyor's office is divided into three classes:

1. Work performed for private parties for which fees are charged as prescribed by the commissioners.
2. Work for various departments of the Federal and District Governments for which no fees are charged.
3. Work done in connection with condemnation of land for streets, alleys, parks, school and playground sites, etc.

SUBDIVISIONS

There has been a moderate amount of subdivision work during the past year. The decrease in building operations has, of course, affected the subdivision activity, and while there has been a decrease in the number of resubdivisions of existing lots, the large tracts coming in for subdivision have been practically the same in number as during the previous fiscal year.

STREET EXTENSIONS

During the past year 41 streets were affected by condemnation or dedication, portions of which were thereby acquired and placed upon the record books of the surveyor's office, these not including street areas acquired by subdivision.

PARKS

The appropriation for the acquisition of small parks was only \$5,000. This appropriation should be substantially increased.

It is believed that nothing could be done to beautify the city more than the acquisition of these small park areas throughout the entire District of Columbia. One need but observe the use of the circles

and reservations within the old city limits to be convinced of the benefits that accrue from these recreational centers. If the appropriation for this purpose is not substantially increased, these beauty spots will be lost.

HIGHWAY PLAN

The past two years will show a large increase in this work, as will be realized from the fact that the total number of plans showing changes in the highway plan, recorded for the past two years, was 51, while for the two years previous only 9 plans were recorded.

CONDEMNATION PROCEEDINGS

During the past year there were 55 condemnation cases pending in court, of which 44 were for streets, parks, school and playground sites, and 11 for alleys. Seventeen cases were confirmed by the court. The total amount awarded as damages for the condemnations confirmed was \$333,184.42, and the total amount assessed as benefits \$36,242.05. This total amount of damages includes the awards in condemnation cases for the acquisition of land for school and playground purposes and also for the third high reservoir, in which cases no assessments for benefits are returnable under the law.

During the past year some of the largest condemnation cases ever prepared were filed in court, notably the opening and extension of Thirteenth, Fourteenth, Nicholson, Peabody, Quackenbos, Sheridan, Tuckerman, and Van Buren Streets, Colorado, Concord, and Luzon Avenues, Fort Drive, and Piney Branch Road through the vast territory lying south of Walter Reed General Hospital. Petitions were also filed for the acquisition of a large territory for an addition to Anacostia Park and for the widening of Benning Road between Fifteenth Street and Anacostia Park.

CLOSING OLD STREETS AND ROADS

The following streets have been closed during the past year under the act of January 30, 1925:

Bell Street running northwesterly from Grant Street NE.

Hoover Road between Twenty-sixth and Otis Streets NE.

Part of Massachusetts Avenue north of Hamilton Circle NW.

Varnell Place between Idaho Avenue and Macomb Street, adjacent to square 1801.

TREES AND PARKING

The number of trees planted along the curbs on the streets in the District of Columbia at the close of the fiscal year was 106,565, a net increase of 1,442 trees. During the fiscal year 2,836 young trees were planted in their permanent positions. The work of extending the tree system in the suburbs and hitherto unplanted localities resulted in 2,381 young trees being planted along many improved thoroughfares. The sum of \$20,504.40 was expended for labor and material to plant trees.

A total of 1,620 trees were removed from public space during the year for various reasons. A majority of these trees stood at the curb line.

The cost of removing 1,221 trees was paid from the appropriation for the trees and parking department at a total cost of \$8,788.27. Twenty-eight trees were removed by private individuals without any cost to the District of Columbia. The cost of other trees removed was paid from the appropriations for other departments and whole cost deposits.

The Fort Dupont and Poplar Point nurseries are well stocked with small trees of the varieties considered best for street planting. It was necessary to purchase 200 Norway maple trees for street planting the past spring, and it will be necessary to purchase from 1,500 to 2,000 trees for street planting during the fiscal year 1929 in an effort to keep pace with the growth of the city and its street improvements. It is believed that in a few years these nurseries will produce all trees necessary to take care of the street planting. One thousand eight hundred and eighty-one Norway maple, 176 red oak, 72 pin oak, 362 sycamore, 1,113 sycamore maple, 185 white oak, 432 sugar maple, and 946 ginkgo seedlings were transplanted at Fort Dupont nursery, and 2,192 elm, 1,323 sugar maple, and 1,793 sycamore maple seedlings were transplanted at the Poplar Point nursery. The sum of \$8,307.86 was expended for labor, teams, fertilizer, etc., for nursery work, and an additional sum of \$1,169.76 was spent for the employment of a night watchman at the Poplar Point nursery.

During the year 10,593 trees were trimmed at a total cost of \$11,093.10. The removal of broken limbs, trees, etc., from the streets caused by storms resulted in an expenditure of \$1,244.03.

One hundred and two thousand and thirty were sprayed for the extermination of leaf-eating insects at a total cost of \$6,899.84. Eight hundred and fifty pin oak trees were sprayed for the extermination of obscure scale at a total cost of \$198.97.

The cultivation of 11,475 young trees involved the expenditure of \$1,832.59.

The removal of weeds from uninclosed parkings and tree spaces was undertaken at a total cost of \$4,250.26.

The sum of \$1,638.65 was expended in treating the cavities in 41 elm, 1 sugar maple, and 140 linden trees that stood at the curb line and 56 linden trees that stood in the public parking.

The height of 478 retaining walls was passed on, and 735 permits were issued affecting the grade of the parking in connection with building operations in the residential districts.

COLLECTION AND DISPOSAL OF CITY REFUSE

For the year just ended the appropriation for street cleaning was \$475,000, and that for the removal of refuse, \$900,000.

In keeping the streets clean flushing was used to a greater extent than heretofore. One of the advantages of this method is the use of these flushers equipped with snowplows to keep the roadways open and passable in time of snow in winter, when it is too cold to flush.

The cost of collecting 72,646 tons of garbage was \$249,131.47, and from this garbage 3,156,000 pounds of grease were produced. The cost of disposal was \$180,053.52, but the revenue from grease sold was \$185,551.13, so that a profit of \$5,497.61 was realized from this source.

At the trash plant the material salvaged sold for \$61,600.90, whereas the cost of disposal was \$98,651.50.

The total receipts this year by this division from all sources were as follows:

Garbage grease-----	\$185,551.13
Salvaged trash-----	61,600.90
Hides (dead animals)-----	2,012.00
Manure-----	1,549.20

The cost of collection and disposal of ashes was \$130,367.21. These ashes are quite valuable for use in grading roadways, and those not used for this purpose were used to fill in low ground.

The number of dead animals collected was 44,976. The cost of this service was \$7,226.12, the net cost after taking into consideration the revenue from the sale of hides being \$5,214.12.

BUILDING OPERATIONS

The estimated value of building operations during the year was \$37,736,170, as compared with the figure given for the fiscal year 1927 of \$49,776,865. While the decrease is evident in so many dollars of construction, yet from an administrative and inspectional standpoint the work has remained about the same. Comparing the amount of building operations for the year 1928 with that of 1924, which is considered normal for building activity within the District of Columbia, shows a decrease of but \$1,667,037.

The number of permits issued was 9,802, as against 10,798 last year, and insignificant decrease of 996. Business buildings numbered 580, whereas there were 699 in 1927. The number of apartments was 59, as against 109, and that of dwellings was 1,539, as compared with 2,477 for the previous year. The total number of new buildings was 2,178 in 1928, as compared with 3,285 in 1927. The number of repairs was 5,019, as compared with 4,926 for the previous year.

There were 2,689 triyearly inspections of elevators, a decrease of 199 compared with last year. Checks totaling \$3,126.25 were received paying for 2,501 inspections. There were 1,051 licenses issued to the operators of elevators.

There were 3,179 certificates of occupancy issued, an increase of 308, as compared with the figure of last year of 2,871.

The total number of inspections of fire escapes, apartments, fire equipment, places of public assemblage, entertainments, etc., was 2,990, while the fees collected were \$1,726.

The amount collected in fees from the operation of the building inspection division was \$61,767.75, while the total expenditures, including salaries, was \$109,803.72.

PLUMBING AND PLUMBING INSPECTIONS

The plumbing inspection division made 57,919 inspections during the year. More than half of these inspections were on account of complaints of insanitary plumbing, leaky roofs, defective rain leaders, defective surface drainage, and wet or damp cellars.

The plumbing board held 25 meetings and examined 93 applicants, of whom 25 passed and were granted licenses as master plumbers.

At the close of the year there were 257 registered master plumbers in the District, 199 of them being actively engaged in the business. There were also 5 registered gas fitters.

PUBLIC CONVENIENCE STATIONS

Four public convenience stations were in operation throughout the year. The attendants reported a total patronage for all stations of about 16,000,000. The cash receipts through the use of pay compartments, telephone commissions, public scales, shoe-shining machines, etc., amounted to \$5,803.58, which is about 20 per cent of the cost of the operation of the stations.

INSPECTION OF STEAM BOILERS

Eight hundred steam boilers were inspected by the inspector of steam boilers, including 97 boilers belonging to the District of Columbia. Nine boilers were condemned as unfit for use. The compensation of the inspector of steam boilers is paid from the fees collected from owners, but no fees were received for inspecting boilers owned by the District of Columbia. The total amount of fees reported was \$3,515 and the expense of inspection \$701.25, leaving a net compensation of \$2,813.75 for the inspector.

EXAMINATION OF STEAM ENGINEERS

The board of examiners of steam engineers held 52 meetings and examined 447 applicants, of whom 349 were found competent and 98 incompetent.

CONDEMNATION OF INSANITARY BUILDINGS

During the past fiscal year the board for the condemnation of insanitary buildings held five meetings and served 144 condemnation orders; 551 buildings were examined, of which 166 were razed, 283 repaired, while on 55 no action was taken; 47 cases are pending.

Repairs to an estimated value of \$86,949 were made, and approximately 1,415 persons were benefited by such repairs; 1,555 persons were required to secure other living quarters through action of the board.

CONSTRUCTION OF MUNICIPAL BUILDINGS

During the year 17 buildings were under construction, as follows: Addition to Langley Junior High School, including an assembly hall and gymnasium, which was completed January 14, 1928; bird house, National Zoological Park, which was completed May 15, 1928; addition of gymnasium and assembly hall to the Petworth School, which was completed November 10, 1927; addition of gymnasium and assembly hall to the West School, which was completed January 1, 1928; four-room addition to the Smothers School, including the necessary remodeling of the old building, which was completed December 31, 1927; McKinley High School, including auditorium, gymnasium, and power house, which was completed September 14, 1928; Gallinger Municipal Hospital, which is expected to be completed

May 1, 1929; water tower No. 2, which was completed June 24, 1928; Gordon Junior High School, which will be completed about September 20, 1928; eight-room addition to the Barnard School, which was completed September 6, 1928; field house for the Virginia Avenue playgrounds, which was completed May 10, 1928; drill tower, including mechanical equipment, at engine house No. 8, which was completed May 21, 1928; Garnet-Patterson Junior High School, which will be completed about January 15, 1929; Potomac Heights School, four-room extensible building, which will be completed about September 17, 1928; eight-room addition to the Margaret Murray Washington Vocational School, which will be completed about November 17, 1928; District Training School, construction of two additional dormitories, cow barn, hay loft and equipment, implement and tool house, which will be completed about April 15, 1929.

Besides the preparation of plans and specifications for the above-mentioned buildings, plans and specifications for about 50 other pieces of work, such as alterations and repairs to buildings, heating, plumbing, and electrical work, for the various buildings have been prepared in the office of the municipal architect, the contract prices therefor amounting to \$214,975.

The contracts entered into by the office of the municipal architect during the fiscal year amounted to \$1,588,700.43.

REPAIRS TO MUNICIPAL BUILDINGS

All municipal buildings are kept in repair under the direction of the municipal architect.

The appropriations for repair work and the expenditures of some were as follows:

For the repairs and improvements to school buildings and grounds, \$550,000 was appropriated, all of which was expended except \$902.54.

For repairs and improvements to police stations and station grounds \$9,000 was appropriated, all of which was expended except \$1.70.

For repairs and alterations to police court building, \$2,500 was appropriated, all of which was expended except \$233.17.

In addition to the above, repairs were made on various buildings under the supervision of the superintendent of repairs to the amount of \$66,208.67 out of the appropriations controlled by other departments.

Steam boilers in over 100 District buildings were inspected and repaired.

WORKHOUSE AND REFORMATORY

The principal work done at the workhouse consisted of work on four dormitories, two of which were practically completed, one isolation building practically completed, one brick guard cottage completed, and the installation of two additional heating boilers at the workhouse boiler house.

During the year 4,813,140 bricks were manufactured at the brick plant, and work on improving brick plant was started.

The principal work done at the reformatory consisted of the remodeling of boiler house and installation of four heating boilers, work on the interior of four dormitories on the south side, work on

six dormitories on the north side, three of which were practically completed, interior equipment of mess hall installed, drainage system installed to carry off storm water from central court, and rough grading work practically completed over entire building site, construction of foundry building, completion of canning factory, installation of machinery in automobile license shop, and completion of final connection of industrial railroad and putting same in service.

HARBOR FRONT

Washington is at the head of navigation of the Potomac River, about 185 miles from the ocean. The total available water front is about 18 miles, of which about 8 miles has been set aside by the Federal Government for its own use and for park purposes. The greater part of the wharf property under the control of the commissioners is located along the Washington Channel.

The harbor police station and dock, the dock of the fire boat, the District morgue, the municipal fish wharves and market, and the District workhouse and sand wharves are located on the Washington Channel between N Street south and Thirteenth Street west. The balance of the frontage is leased by steamboat companies, boathouses, warehouses, lumber dealers, etc.

The total revenue from the wharf rentals, including the fish market, amounted to \$36,305.89, an increase of \$1,747.44 over the revenues for the last fiscal year.

Appropriations of \$13,000 have been obtained for repairing the harbor precinct dock, the workhouse wharf, and for reconstructing the morgue wharf.

Many of the existing structures along the Washington Channel have reached such a stage of deterioration that shipping interests are not attracted to this port. Several of the wharves have been condemned as unsafe and a further delay in beginning the work of improvement, as is contemplated by law, will unquestionably result in further condemnations and add to the existing dilapidated and unsightly conditions. It is hoped that Congress will soon receive the report for the improvement of this water front, that it will be adopted promptly, and that funds for beginning this much needed improvement will soon be appropriated.

DISTRICT BUILDING

No changes were made in the assignment of rooms in the District Building, because of the overcrowded condition of every department. A recent survey disclosed the fact that there was as little as 61 square feet of floor space per person as compared with 114 square feet in 1922. Necessary repairs were made to the mechanical equipment by the personnel of the power plant, including plumbing throughout the building. A new air compressor for the pneumatic-tube system was installed.

Two thousand three hundred and thirty-seven tons of coal at a total cost of \$13,572.22 was consumed.

Necessary repairs were made to the building, such as doors, locks, windows, blinds, flooring, painting, and varnishing; \$2,821.12 was expended for painting. The board room was completely renovated

and two of the corridors painted. The cost of wall and ceiling painting combined average about 11 cents per coat per square yard.

Seven hundred thirty thousand six hundred and fifty kilowatt-hours were generated, of which 546,655 were used for lighting and 183,995 for power.

Numerous replacements and repairs were made to the six passenger and one freight elevators.

MUNICIPAL GARAGE

Fifty-three automobiles were maintained and kept in operation for the various departments of the District government. The labor and mechanical forces were engaged on repairing automobiles, carrying mail, and driving for departments without automobiles or drivers, and greasing, oiling, and washing cars at night. The automobile repair shop, which is located at Second and Bryant Streets NW., is operated in connection with the municipal garage.

Operating costs for the maintenance of the 53 automobiles, including gasoline, oil, tires, labor, and miscellaneous supplies and drivers, amounted to \$21,695.12, or an average of \$409.34 for each car, or \$0.04095 per mile, a saving over last year of \$14.73 per car, or of \$0.0093 per mile.

STREET LIGHTING

There are 26,348 public lamps of all kinds in the avenues, streets, alleys, etc., under the jurisdiction of the Commissioners of the District of Columbia. Of these, 10,016 are gas and 16,332 electric; of the gas lamps, 9,202 are single-burner mantle, 60 candlepower, 557 are double-burner mantle, 120 candlepower, and 257 are small flat flame, 8 candlepower, for designation purposes; of the electric, 1,292 are magnetite arc, 14,650 are incandescent, ranging from 60 to 1,000 candlepower each (41 per cent of 60 and 100), and 390 are incandescent of about 10 candlepower, for "designation."

There was a net increase during the year of 1,375 lamps.

The increase in aggregate candlepower of the street-lighting system under the jurisdiction of the commissioners is from approximately 4,357,000 to approximately 6,037,000, about 38½ per cent. The increase in annual charges is, however, only about 19 per cent. The cost rate, in annual rate charges, on the total installation, was reduced from 13.92 cents to 11.97 cents per candlepower-year.

The total gas lighting has been reduced by nearly 11 per cent, and from about 24 per cent to about 15½ per cent of the total candlepower.

The approved project of improved lighting has been further advanced, with continued special attention to arterial highways and to anticipation of paving. Plans are made for comprehensive treatment of areas, as distinguished from through lines of thoroughfare.

Of 6.6-ampere arc lamps (rating 1,120 candlepower and 7.17 cents per candlepower-year), the number in service was increased by 719 to 1,236; of 4-ampere arc lamps (rating 430 candlepower and 14.75 cents per candlepower-year), the number in service was decreased by 333 to 56. The improved arc lamp retains a place not only by reason of its high economy but because its color characteristic is

valuable in contrast with that of lighted show windows. Examples of recent arc-lamp installations are: On North Capitol Street, from D Street to Florida Avenue; on Fourteenth Street, from Water Street SW. to Newton Street NW.; on Fifteenth Street NW., from Treasury Place to New York Avenue; and on Seventh Street, from P Street SW. to Florida Avenue NW.

Of incandescent lamps of 1,000 candlepower, 600 candlepower, 400 candlepower, and 250 candlepower combined, the number in service was increased by 3,426; of 100 candlepower and 60 candlepower, decreased by 1,391; net increase, 2,035. Among the prominent items of new incandescent lighting are: (a) Seventeenth Street NW., from B Street to Massachusetts Avenue; (b) Pennsylvania Avenue SE., from Second Street to Commodore Barney Circle; (c) Sixth Street, from Water Street SW. to Florida Avenue NW., (d) Georgia Avenue NW., from Trumbull Street to New Hampshire Avenue; and (e) Nichols Avenue SE., from Anacostia Bridge to Upsal Street. These illustrate the varying treatment to suit physical conditions, some on new ornamental posts, some applied to existing poles.

Of the mantle gas lamps, the number of single-burner in service was decreased by 838, and of double-burner, decreased by 216; the decrease in mantles was 11.02 per cent, compared with 8.26 per cent in the preceding year, and compared with increases in earlier years.

Of the designation lamps in service, there was a net increase of 74 electric, a decrease of 66 gas; net overall increase of 8. These lamps are used mostly to maintain a red light on post bearing a fire-alarm box.

The claims against certain railway companies for payment of street lighting charges, in accordance with law, have been settled out of court.

SIGNALS SYSTEM—FIRE ALARM, POLICE PATROL, AND TELEPHONE SERVICES

There were 942 fire-alarm boxes in service at the end of the year, 808 on underground and 134 on overhead wires, a net increase of 27 over the preceding year; 3,704 box and local fire alarms (exclusive of "additional" alarms) were received and transmitted during the year, of which 299 were false alarms.

There were 530 police patrol boxes in service at the end of the year, 437 on underground and 93 on overhead wires, an increase of 12 over the preceding year; 3 boxes were changed from overhead to underground connection.

There were 1,820 telephones connected to the District system at the end of year, and 29 in use as portable sets by fire and electrical departments, an increase of 24 in the year.

There was no change in the number of cells of storage battery in service on fire alarm, police patrol, and local circuits, 2,692.

There were, of the distribution equipment of the composite signals system (fire alarm, police patrol, and telephone), at the end of the year a grand total of 8,727 miles of conductor, of which 8,545 are underground and 182 miles overhead, an increase of 478 miles underground and decrease of 8 miles overhead.

REGULATION OF ELECTRIC WIRING

The number of permits issued for installation of electrical wires and apparatus on private premises was 12,639; fees paid to collector of taxes, \$24,390.10; number of inspections recorded, 30,072.

There are of record in streets, avenues, alleys, etc., of the District of Columbia, in the service of the United States, the District of Columbia, and public-service companies, wire-carrying poles to the number of 28,324, of which 761 are Government owned.

SEWERAGE AND SEWAGE DISPOSAL SYSTEM

The construction and maintenance of the sewerage system and the sewage-disposal system of the District of Columbia is placed under a division in charge of the sanitary engineer.

The length of main and pipe sewers constructed during the year was 28.42 miles. The total length of main and pipe sewers on June 30, 1928, was 897.18 miles, of which 173.48 miles are main sewers and 723.7 miles are pipe sewers. In addition to the above new sewer work, 476 storm-water catch basins were constructed, making the total now in service 7,622.

There was expended during the year on new extensions of the sewerage system the sum of \$1,190,913.96 and on the sewage-disposal system \$44,275.90. The total cost of the sewerage system to June 30, 1928, was \$20,372,676.95, and of the sewage-disposal system to the same date was \$6,281,568.50, a total of \$26,654,245.45.

The main sewerage pumping station and three substations were in continuous operation throughout the year and Woodridge substation until June 4, 1928, when the flow to it from 380 houses was diverted to the sewers of the Washington suburban sanitary district. The pumpage of sewage and storm water at the main station amounted to 29,753,998,000 gallons during the year. The Poplar Point substation pumped 725,000,000 gallons, the Rock Creek substation 847,014,000 gallons, the Woodridge substation 9,758,525 gallons, and the Earle Place substation 437,950 gallons. Eliminating Rock Creek, Woodridge, and Earle Place substations, which deliver their discharge to the main station, the above indicates a mean daily discharge through the outfall sewer of 83,504,104 gallons.

In spite of a considerable loss in heat value of coal due to spontaneously generated bunker fires during the year, the coal consumption fell to 4,423 tons, 166 tons less than the previous year. A method of bunkering coal having been put in practice which it is believed will prevent any future fires and practically all of the suggestions of the Bureau of Mines having been adopted, it is confidently expected that another year will show an appreciable saving in coal.

The pollution of the Potomac River by discharge of raw sewage has been somewhat worse during this year than last, but not as bad as it has been during some recent years.

The continual increase of flow into Rock Creek substation due to the extension of the upper Potomac interceptor has resulted in overburdening it. A contract was let during the latter part of the year for the necessary pumps, motors, and starting equipment to increase the pumping capacity of the substation about fivefold, an installation which it is believed will meet all future needs.

After some months of trouble with Woodridge substation, due to repeated occurrences of flow into the station beyond its pumping capacity, arrangements were made to divert the flow from the substation to the sewers of the Washington suburban sanitary district. Connections were made and the substation put out of service on June 4, 1928.

WATER MAINS

During the year 108,996 linear feet, or 20.64 miles, of water main of various sizes were laid, at an aggregate cost of \$257,191, making a total length of main now in service of 772.16 miles.

WATER CONSUMPTION

The mean daily water consumption was 70,170,424 gallons, giving an approximate mean daily per capita consumption of 127 gallons. Total pumpage for the year was 15,133,429,400 gallons.

Total coal burned was 6,997 tons.

The cost of operating pumps for the year was \$99,045.60, as against \$121,871.33 in 1927, the decrease being due to the operation of the new Dalecarlia pumping plant for a part of the period.

The financial statement of the water department revenues and expenditures will be found in the report of the auditor of the District of Columbia.

WATER METERS

During the year 2,173 meters were installed, and 79,077, or 85.3 per cent, of the total water services are now metered.

PROCTOR L. DOUGHERTY,

SIDNEY F. TALIAFERRO,

WILLIAM B. LADUE,

Commissioners of the District of Columbia.

REPORT OF THE SUPERINTENDENT OF THE WATER DEPARTMENT

AUGUST 25, 1928.

SIR: The annual report of the activities of the water department for the fiscal year ended June 30, 1928, is submitted herewith. Owing to the limited space detailed reports of the various subdivision heads could not be included in this report, but can be found on file in this office.

The total length of cast-iron water mains of various sizes laid during the fiscal year was 108,996 linear feet, or 20.64 miles, about 3 miles less than for the preceding year.

Total length of water mains in the system of all sizes is 772.16 miles.

The mean daily water consumption for the year was 70,170,424 gallons, which showed a mean daily per capita consumption of approximately 127 gallons. The total combined consumption for the Bryant Street and Dalecarlia stations for the year ended June 30, 1928, was 15,133,429,400 gallons, which was 310,960,616 gallons more than for the preceding year.

Permanent pumping to the different services was taken over by the United States Government, as follows: First high service on June 2, 1928; second high service on December 9, 1927; and the third high service on April 6, 1928.

An important trunk water main was completed, which extended the second high Anacostia service in Alabama Avenue SE. to the District line. Detailed report under "Engineering and construction."

A water tower for the fourth high service at Reno Reservoir is nearing completion and will be put in operation in a very short time. This department has completed the laying of a 20-inch water main to supply the new tower and a 12-inch main for an overflow pipe.

Over 3,000 service pipes were found broken during the year; approximately 1,400 had to be cut off to enforce repairs.

A substantial increase was also noted in leaking joints, and broken mains increased about 100 per cent.

Total cost of operating storerooms and yards at the Bryant Street pumping station for the year was 2,580 per cent of the value of material, plus value of equipment disposed of.

For the thorough and efficient work performed by the employees of the department and those in charge of subdivisions, I extend my hearty appreciation.

J. S. GARLAND,
Superintendent Water Department.

To the ENGINEER COMMISSIONER.

DISTRIBUTION BRANCH

ENGINEERING AND CONSTRUCTION

By special act Congress authorized the laying of a 12-inch trunk water main in Alabama Avenue from Branch Avenue to the District line, a total distance of 9,000 feet. The completion of this water main was the most important of the year, as it assures the territory through which it passes protection against fire hazards and is available for domestic service as well.

Water-main projects originating in the water department aggregating 11,847 feet of 12-inch main and 1,300 feet of 16-inch main were laid. These larger water mains were necessary as a part of the general distribution system in various sections of the District of Columbia.

All connections necessary to the placing of the new water tower and electric-driven centrifugal pump at Reno Reservoir in service were installed. This work consisted of laying considerable 12-inch, 16-inch, and 20-inch water pipe to permit the extension of the fourth high service to the high areas of Chevy Chase and adjacent subdivisions which will benefit by adequate water pressure.

Connections between the new concrete water mains provided in the increased water supply project just completed and the existing supply mains of the distribution system were made at the following locations:

Wisconsin and Nebraska Avenues NW.....	36 by 20-inch connection.
Fourth and College Streets NW. (two).....	48 by 42-inch connection.
Georgia Avenue and Military Road NW.....	48 by 24-inch connection.
Thirty-ninth Street north of Donaldson Street NW..	36 by 24-inch connection.
Military Road and Nebraska Avenue NW.....	48 by 12-inch connection.
Conduit Road north of Little Falls Road NW.....	36 by 12-inch connection.

Owing to the inaccessibility of the 12-inch water main in U Street between Tenth and Fourteenth Streets, the old 12-inch main which was located under the car tracks was abandoned and a new water main laid, all house services being connected thereto. Concrete construction of car tracks was the cause of numerous leaks.

The grading and paving work in Seventeenth Street north and south of Decatur Street made necessary the lowering of the 36-inch water main.

Due to the grading and paving of Woodley Road from Twentyninth Street to Wisconsin Avenue much lowering and adjusting of 12-inch and 20-inch water mains were necessary.

Owing to the shallowness of the 12-inch water main in South Capitol Street between Virginia Avenue and I Street, the main was lowered to a depth of 4 feet below the street grade. Heavy traffic over this street had been the source of numerous joint leaks.

Miscellaneous drafting

Miscellaneous drawings and tracings made.....	932
Projects made.....	280
Engineers' notes posted and checked on 50-foot, 100-foot, and 300-foot scale maps and tracings.....	3, 646
Intersection cards made.....	312
Intersection cards posted and checked.....	1, 336
Cards forwarded to assessor.....	476

Green connection cards made for registrar.....	58
Communications written.....	738
Reports written.....	397
Total.....	1,135
Permits passed.....	2,317
Locations of water mains given out.....	2,713
Water pressures computed and given out.....	288
Estimates made.....	461

Posted daily 50-foot, 100-foot, and 300-foot scale water main maps and map tracings; posted daily the work in progress; worked on cards showing mains, valves, etc., at street intersections; worked on valve index; passed schedules of work to be done under commissioners' orders; passed schedules of work to be done by the surface department; passed permits for terraces, copings, and driveways; miscellaneous lettering, estimates, reports, and general office work.

STEAM ENGINEERING

The following is a summary of work done at the pumping stations under the jurisdiction of this department:

For the fourth high service at Reno, the water is pumped from the third high service reservoir at Reno to elevated tanks by motor-driven centrifugal units. This station is taken care of by three enginemen, who work in 8-hour shifts. The water pumped for this service during the year was 228,299,472 gallons, or a mean of 625,478 gallons daily.

For the first and second high services at Anacostia the water is taken from the gravity service and pumped to elevated tanks by centrifugal units. This station is taken care of by four enginemen, who work in 8-hour shifts. The water pumped for this service during the year was 349,044,000 gallons, or a mean of 956,284 gallons daily.

The station duty for the Bryant Street pumps, to 1 p. m., April 6, 1928, when the Dalecarlia plant took over the third high-service supply permanently, was 87.4 millions of foot-pounds per hundred pounds of coal, as against 86.78 for the corresponding period in the preceding year, and represents a saving of approximately 46.6 tons of coal, at \$6.05 per ton.

The total combined consumption of this station and the Dalecarlia station for the year ended June 30, 1928, was 15,133,429,400 gallons, which was 310,960,616 gallons more than for the preceding year. The greatest consumption for one day, July 28, 1927, was 82,927,713 gallons; the least consumption in one day, December 18, 1927, was 61,126,608 gallons.

The total operating expenses for this station, excluding overhead, were \$99,045.60.

The total coal used at this station during the year was 6,997 tons, which cost approximately \$6.05 per ton. The total coal used includes 201 tons used in heating.

Work of special importance done during the year includes (1) the installation of new suction main in pumping station and a new 3 m. g. d. centrifugal pumping unit at Reno, (2) making and delivering two aluminum patterns for water department valve casings and three aluminum patterns for 24-inch manhole frames and covers for the Lorton foundry as per recommendation of the Efficiency Bureau.

The activity of the various shops continued as usual.

WATER SURVEY

The water-survey division handled routine work on complaints during the year and special investigations noted herein. Complaints received were substantially greater in number than during the previous year. Over 3,000 service pipes were found leaking as against 2,500 previously. It was necessary to cut off 1,400 of these to enforce repairs, as compared with about 1,000 previously. Substantial increase was noted also in leaking main joints, and broken mains increased about 100 per cent. Increased activities in all work were handled without increased personnel, although overtime work was necessary in some cases.

Employees of this division cooperated with other divisions in the preparation of projects for permanent and temporary improvements to the distribution system and with the United States Engineer Office upon like matters. These projects embraced increased pressure to gravity system, enlargement of fourth high-service territory and pumpage capacity, and temporary gravity supply pending repairs to Washington Aqueduct tunnel.

Since July 1 this division inserted all taps for new service connections and made inspection of all new services in public space.

This division also handled all emergency ditch pumping jobs and furnished electric-lighting service in night construction and repair work.

STOREKEEPING

Cost of operating storerooms and storage yards for the year was 2.58 per cent of the value of material issued plus value of equipment disposed of. A comparison of the percentages of cost of operating the storerooms and storage yards for the past 14 years shows: From 4.676 per cent in 1915 to 2.580 per cent in 1928.

The total value of material issued and equipment disposed of during the year was \$500,822.44, and the total wages paid to employees during the year was \$19,410.42.

During the year we received material having a cost value of \$440,672.54, and issued material having a cost value of \$486,189.61.

The cost of equipment received during the year was \$67,840.68, and the value of equipment which was disposed of during the year amounted to \$14,632.83.

The value of material on hand at the end of the year was \$174,535.25, and the value of equipment in stock and in service at the end of the year was \$757,354.06.

TRANSPORTATION

The transportation equipment at the end of the year was composed of 50 automobile trucks and passenger cars, ranging in capacity from a 2-passenger car to a 5½-ton truck. The total number of trucks has not been increased during the year, but six old trucks were traded in as part payment for six new trucks.

The revenue derived from our trucks which were engaged on general hauling during the year amounted to \$31,389.10. The cost of maintenance and operation of these trucks during this period amounted to \$30,947.22. Particular attention is invited to the low

cost of operating the storerooms and storage yards and to the financial condition of the general hauling account.

REVENUE AND INSPECTION BRANCH

WATER RATES

In accordance with an act of Congress approved May 10 and July 3, 1926, the rates for water were increased as follows:

The rate for domestic purposes shall be charged according to stories and front feet. On all tenements two stories high or less with front width of 16 feet or less, \$7.03 per annum in advance. For each additional front foot or fraction thereof, greater than one-half, 44 cents. For each additional story or part thereof, one-third of the charges as computed above.

Business premises are rated according to their size, class, volume of business, and water facilities, and rate from \$1.41 to \$25. If the flat rate on business establishments reaches \$25 or more, the owner or occupant is required to install a water meter at his own expense.

A minimum rate of \$6.36 will be charged against all consumers supplied with water through meters, which allows the use of 7,500 cubic feet of water during the year; water used in excess thereof will be charged for at the rate of 6 cents per 100 cubic feet.

TABLE 1.—Statement of collections

Water rents:		
Flat rate.....	-----	\$110, 391. 69
Meters.....	-----	1, 109, 420. 98
Building purposes.....	-----	5, 109. 18
Total.....	-----	1, 224, 921. 85
Water-main tax, principal and interest.....	-----	196, 237. 19
Miscellaneous receipts.....	-----	691. 76
		1, 421, 850. 80

TABLE 2.—Statement of cash receipts of the water-rent fund for the fiscal years from June 30, 1924, to June 30, 1928

Year	Water rents	Water-main tax, principal and interest	Miscellaneous receipts
1924.....	\$1, 035, 858. 89	\$109, 843. 31	\$619. 72
1925.....	1, 023, 603. 98	141, 080. 86	935. 42
1926.....	1, 052, 330. 56	176, 799. 22	1, 142. 99
1927.....	1, 286, 025. 90	164, 592. 58	1, 219. 24
1928.....	1, 224, 921. 85	196, 237. 19	691. 76
Total.....	5, 622, 741. 18	788, 562. 16	4, 609. 13
1929 ¹	1, 300, 000. 00	175, 000. 00	1, 000. 00
1930 ¹	1, 305, 000. 00	175, 000. 00	1, 000. 00

¹ Estimated.

TABLE 3.—General information

Consumption of water through meters:	Cubic feet
District meters.....	690, 000, 000
District meters, municipal buildings.....	105, 200, 000
Private meters.....	976, 000, 000
Private meters, charitable institutions.....	16, 100, 000
Total.....	1, 787, 300, 000

Meters in service	In use June 30, 1927	Installed 1928	Abandoned 1928	Total in use June 30, 1928
District meters.....	73, 160	615	503	73, 272
Municipal buildings.....	284	36		320
Private meters.....	4, 506	341	65	4, 782
Charitable.....	212	10	1	221
Fire service.....	482			482
Total.....	78, 644	1, 002	569	79, 077

Average cost of reading meters.....	\$0. 124
Average cost of computing and making bills.....	. 173
Average payment for premises in which District meters are installed.....	7. 49
Average payment, flat-rate accounts.....	10. 06

Water services:	
In use June 30, 1927.....	90, 964
Installed, 1928.....	2, 173
Total.....	93, 137
Abandoned, 1928.....	460
In use June 30, 1928.....	92, 677
Metered.....	79, 077
Not metered.....	13, 600
Percentage of services metered.....	85. 3

TABLE I.—Cost of work done by the water department for the year ended June 30, 1928

Heads of expenditures	Per diem and salaries	Material expended, cuts and transportation	Total expenditures	Charge to general account		Hauling and deposit accounts, debtor
				Maintenance	Extensions	
Water survey (detection of leaks).....	\$13, 001. 25	\$733. 23	\$13, 734. 48	\$13, 734. 48		
Maintenance of meters.....	28, 797. 22	9, 212. 21	38, 009. 43	38, 009. 43		
Installation of meters.....	10, 956. 62	6, 530. 47	17, 487. 09		\$17, 487. 09	
Office of water registrar.....	85, 204. 59	4, 753. 33	89, 957. 92	89, 957. 92		
Inspection and repair of house service.....	23, 505. 66	3, 980. 38	27, 486. 04	27, 486. 04		
Tapping water mains.....	8, 024. 87	7, 339. 54	15, 364. 41			15, 364. 41
New service installed.....	6, 728. 43	9, 475. 10	16, 203. 53			16, 203. 53
Engineering (field survey).....	42, 757. 38	446. 29	43, 203. 67			43, 203. 67
Transportation account.....	25, 721. 83	9, 085. 71	34, 807. 54			\$34, 807. 54
Operation and repair of valves, fire hydrants.....	36, 993. 83	5, 988. 04	42, 981. 87	42, 981. 87		
Installation of fire and public hydrants.....	7, 916. 90	25, 483. 54	33, 400. 44			33, 400. 44
Water mains laid.....	96, 066. 75	161, 125. 05	257, 191. 80			257, 191. 80
Repair to leaks.....	42, 861. 77	19, 357. 39	62, 219. 16	62, 219. 16		
Maintenance of reservoirs, lodges, and towers.....	7, 506. 98	5, 277. 25	12, 784. 23	12, 784. 23		
Care of grounds.....	7, 797. 03	148. 17	7, 945. 20	7, 945. 20		
Repayment and deposit work.....	52, 713. 70	65, 745. 90	118, 459. 60			118, 459. 60
Replacement work, lowering mains, etc.....	20, 069. 35	15, 886. 19	35, 955. 54	35, 955. 54		
Plans, estimate, and tests.....	16, 932. 64	363. 26	17, 295. 90			5, 765. 30
Care of Bryant Street pumping station.....	24, 840. 31	3, 466. 72	28, 307. 03	28, 307. 03		
Operation and repair of pumps:						
Bryant station.....	52, 927. 25	58, 780. 00	111, 707. 25	111, 707. 25		
Reno station.....	5, 930. 17	7, 665. 83	13, 596. 00	13, 596. 00		
Anacostia pumping station.....	7, 244. 34	5, 744. 43	12, 988. 77	12, 988. 77		
New pumping equipment.....	578. 99	1, 064. 39	1, 643. 38			1, 643. 38
Shop work.....	46, 462. 59	51, 347. 80	97, 810. 39	97, 810. 39		
Furnished other District of Columbia departments.....	5, 649. 25	46. 46	5, 695. 71	5, 695. 71		
Gross expenditures.....	677, 189. 70	479, 046. 68	1, 156, 236. 38	612, 709. 62	390, 259. 62	153, 267. 14

SUMMARY

Expenditures:		Charge to:	Per cent
Per diem pay rolls.....	\$517,011.45	Maintenance.....	\$612,709.62 61
Salary pay rolls.....	160,178.25	Extensions.....	390,259.62 39
Total services.....	677,189.70		
Material expended, cuts, etc.....	479,046.68		
Gross expenditures.....	1,156,236.38		
Less transportation and repay- ment credits.....	153,267.14		
Net expenditures.....	1,002,969.24	Total.....	1,002,969.24 100

TABLE II.—Statement of the distribution system, including mains laid by the United States, the District of Columbia, and on account of repayment work

Diameter	In service June 30, 1927	Laid dur- ing year ended June 30, 1928	Abandon- ed during year ended June 30, 1928	In service June 30, 1928
3-inch.....linear feet..	91,550	1,297	86	92,761
4-inch.....do.....	153,828	3,165	1,515	155,478
6-inch.....do.....	1,468,520	1,911	5,775	1,464,656
8-inch.....do.....	1,322,460	70,017	1,335	1,391,142
10-inch.....do.....	9,114	6		9,120
12-inch.....do.....	484,108	30,174	3,115	511,167
16-inch.....do.....	85,990	1,960	6	87,944
20-inch.....do.....	146,216	370	28	146,558
24-inch.....do.....	37,329		30	37,299
30-inch.....do.....	72,166	12	12	72,166
36-inch.....do.....	63,878			63,878
42-inch.....do.....	63,23			23
48-inch.....do.....	44,172	84		44,256
75-inch.....do.....	600			600
Total.....	3,979,954	108,996	11,902	4,077,048
Stop valves.....	12,865	541	164	13,242
Fire hydrants.....	4,502	168	15	4,655
Public hydrants.....	287	13	1	299
Sanitary fountains.....	29	1		30
Public wells.....	39			39
Horse fountains.....	173	1	2	172

TABLE III.—Statement of the length and cost of water mains laid from July 1, 1878, to June 30, 1928, paid from water department funds

Diameter	In service June 30, 1927	Laid dur- ing year ended June 30, 1928	Abandon- ed during year ended June 30, 1928	In service June 30, 1928
3-inch.....linear feet..	76,810	357	86	77,081
4-inch.....do.....	110,515	737	1,515	109,737
6-inch.....do.....	1,073,794	1,392	5,775	1,069,411
8-inch.....do.....	1,256,525	67,455	1,335	1,322,645
10-inch.....do.....	6,746	5		6,751
12-inch.....do.....	421,891	21,505	3,115	440,281
16-inch.....do.....	72,457	1,959	6	74,410
20-inch.....do.....	135,114	370	28	135,456
24-inch.....do.....	16,845		30	16,815
30-inch.....do.....	84,599	12	12	84,599
36-inch.....do.....	38,244			38,244
42-inch.....do.....	23			23
48-inch.....do.....	14,309	84		14,393
Total.....	3,257,872	93,876	11,902	3,339,846

Total cost to June 30, 1927.....	\$6,576,300.89
Total cost for the year ended June 30, 1928.....	257,191.80
Aggregate cost to June 30, 1928.....	6,833,492.69

REPORT OF THE SANITARY ENGINEER

SEPTEMBER 1, 1928.

SIR: The annual report of the sanitary engineer, covering the fiscal year ended June 30, 1928, is submitted herewith.

More office space continues to be an urgent need of the department, no relief of crowded conditions being afforded during the year.

The minimum dilution figure—that is, the flow in cubic feet per minute per thousand of population—afforded by the Potomac River flow and based on a population of 552,000, estimate of the Bureau of the Census, fell to 136 on September 18 and 30 and October 1. The figure fell well below 200 from September 10 to 18 and September 22 to October 3, a total of 21 days.

The length of service sewer per house served increased from 98 feet last year to 110 feet this year, but the cost per linear foot has been reduced \$1.22 and the cost per house served reduced \$80.69.

Practically all of the improvements recommended by the Bureau of Mines have been completed, and it is confidently expected that the coming year will show a material reduction in coal consumption as a result.

After some months of trouble with Woodridge substation, caused by excessive flow to that substation, arrangements were made to drain the pocket taken care of by it into the sewers of the Washington suburban sanitary district. Connections were made and the station put out of service on June 4, 1928. The substation is being kept in readiness for service until such time as it is known that it will no longer be needed.

The extension of the upper Potomac interceptor has so increased the flow into Rock Creek substation that it has been necessary to increase its pumping capacity. To accomplish this a contract was let to Fairbanks, Morse & Co. to furnish three pumps, three motors, and necessary starting equipment, which will increase the capacity of the substation some fivefold, enough to meet all probable future needs.

Following is a summary of the sewerage and sewage-disposal systems as of June 30, 1928:

Length of sewerage system (miles):	
Main sewers.....	173. 48
Pipe sewers.....	723. 70
Total.....	897. 18
Length of sewage-disposal system.....	39. 88
Total length.....	937. 06
Cost of the sewerage system.....	\$20, 372, 676. 95
Cost of sewage-disposal system.....	6, 281, 568. 50
Total cost.....	26, 654, 245. 45

The sanitary engineer desires to avail himself of this opportunity to express his appreciation for the loyal and efficient services of the personnel of the department whose cooperation has made the accomplishments of the year possible.

A brief résumé of the year's activities follows:

OFFICE ENGINEERING

This section is made up of three subsections: (1) Office engineering in relation to the sewer department proper, (2) office and field engineering with relation to the work of the public-service corporations, and (3) the general clerical work of the entire division.

The duties of subsection (1) include all computing, designing, and drafting in connection with the development of the sewerage and sewage-disposal systems, engineering drafting, and clerical work found necessary in collaboration with other departments and other sections of the sewer department, all preparation of data and writing of indorsements on engineer department files referred to it, and the recording of office records closely allied to engineering work.

During the fiscal year the following work was performed under subsection (1): Necessary and incidental to 115 contracts, drawings and specifications were prepared and bids were computed and scheduled; 7 plats to accompany permits for construction across Government property, 28 drawings of junction chambers and 11 miscellaneous drawings showing special work, such as minor pumping stations, regulator chambers, special catch basins, sumps, etc., were prepared; 89 miscellaneous plats covering basin construction and minor sewer extensions were made; 17 drainage studies, 5 of which were major projects, were prepared, involving finished maps indicating general and subareas as well as the collaboration of run-off and capacities; 20 roadway schedules involving 536 jobs and 247 sidewalk schedules were studied and, where desirable, new sewers or the replacement of old and defective sewers were recommended in advance of the proposed paving; 74 street-grade maps and 145 alley-grade sheets forwarded by the highway department creating new or modifying existing grades were studied and acted upon according to their bearing on existing or future underground construction; 19 cases concerning the opening and closing of alleys were studied as to their effect on the drainage system and approved or conditionally approved; 65 notices accompanied by blue prints carrying pertinent information were forwarded to the assessor for action; 22 rights of way with accompanying plats were prepared for the purpose of acquiring easements for sewer construction across private property; 11 maps on a scale of 100 feet to the inch were prepared of outlying sections of the District, showing all streets, street grades, subdivisions, sewers, etc.; maps of the department were posted to date by the recording thereon of 271 cases of separate construction work, 299 subdivision, and 891 splits; the department's privy map was posted from time to time during the year and at the end of the fiscal year; the same indicated the existence of 3,428 privies, an increase of 11 over the previous year; a special study was prepared and submitted to Congress showing all privies in the District and the route and cost of the necessary sewers to eliminate same; 1,664 plumbing slips were issued in connection with applications for building permits for the erection of 1,685 dwellings and 80 apartment houses; blue prints were prepared and indorsements written of 924 jacketed engineer department files, of which 235 were originated by this office in connection with paving schedules or the replacement of defective sewers; 313 files carrying ordered work were posted on the records

of the department and, where necessary, notices of pending sewer assessments, of which there were 421 in number, were forwarded to the assessor; 534 new houses were plotted on the maps of the department; 494 completion reports of construction work were handled and filed; 6 certifications as to the availability of sewers were made to the health officer; and card indexes reflecting all new construction, subdivision, completion reports, record sheets, area drains, Y branches, standard drawings, sewers construed as service sewers, rights of way, and subsoil drains were kept posted to date.

The duties of subsection (2) include the preparation of all permits for public-service corporations and private underground construction in public space, as well as the supervision of such work while in progress. All requests for permits are carefully studied with a view to avoiding interference with existing underground structures and assuring reservation of sufficient space for future underground structures. Because of the efficient system of preparing and recording permits, all but those for work of a decidedly complex nature are ready for issuance within 24 hours, and applicants can secure minor permits of an emergency nature by waiting until they have been prepared. Every effort has been made to eliminate all unnecessary procedures and create a permit service which is prompt, efficient, and courteous. In order to cooperate fully with the permit clerk the papers prepared in this office are arranged in a manner permitting ready access to the permits and vouchers attached thereto.

During the year 3,174 permits for underground construction were prepared and 5,748 inspections of work in progress were made; ninety-two 50-foot scale maps were prepared for recording underground construction in outlying sections of the city; 679 record sheets were made, showing work in detail, to supplement the map and card records.

In connection with 1928 paving schedules, this office made studies to determine necessary or desirable extensions of underground construction, and advised the Public Utilities Commission through the board of underground construction to recommend that the various public-service corporations be required to make such extensions in advance of new paving. Applications for extending underground construction in newly paved streets are referred to the highway department for recommendation before preparing permits. Control over street surfaces is thereby retained by the highway department. In cases where granting of permits for urgently needed services is not recommended, efforts are made to provide them by rerouting in the sidewalk or tunneling under a portion of the new roadway, thereby avoiding disfiguring cuts in it.

The following is a summary of work performed which required preparation of permits, field inspection, and location, as well as mapping and recording:

Work done by public-service corporations

Potomac Electric Power Co.:		
Conduits laid, various sizes	-----miles	13,9263
Premises connected with electric conduit	-----	2,460
Manholes constructed	-----	1,350
Drains connecting manholes with sewerage systems	-----	212

Chesapeake & Potomac Telephone Co.:	
Conduits laid, various sizes-----miles--	11. 4520
Manholes constructed-----	142
Drains connecting manholes with sewerage systems-----	14
Capital Traction Co.:	
Drains connecting manholes with sewerage systems-----	1
Washington Railway & Electric Co.:	
Conduits laid, various sizes-----miles--	0. 0045
Manholes constructed-----	1
Drains connecting manholes with sewerage systems-----	7
Western Union Telegraph Co.:	
Conduits laid, various sizes-----miles--	0. 2805
Manholes constructed-----	5
Drains connecting manholes with sewerage systems-----	1
Postal Telegraph Co.:	
Conduits laid, various sizes-----miles--	0. 0377
Manholes constructed-----	3
Gas companies:	
Gas mains laid, various sizes-----miles--	27. 5143
Premises connected with gas mains-----	2, 361

Charges for supervision and inspection of this work were as follows:

Potomac Electric Power Co-----	\$2, 768. 12
Chesapeake & Potomac Telephone Co-----	1, 294. 41
Washington Gas Light Co-----	2, 035. 27
Georgetown Gas Light Co-----	1, 186. 76
Washington Railway & Electric Co-----	9. 00
Capital Traction Co-----	1. 00
Total-----	7, 294. 56

Work done by private corporations and individuals

Vaults constructed in public space-----	18
Fuel-oil tanks installed, various capacities-----	50
Gasoline and fuel-oil fill pipes laid to curb-----	113
"Free air" hose lines for inflating auto tires-----	1
Private tunnels in public space-----	1

Work done for the United States Government

One 5 by 7.5 foot reinforced concrete tunnel, built under contract for the United States Bureau of Standards, across Van Ness Street NW.

Work done by the water department

Drains connecting fire hydrants, air valves, and watering troughs with sewerage systems-----	7
--	---

The duties of subsection (3) include the preparation of requisitions and vouchers, records of cost of day labor and contract construction, preparation of pay rolls and pay-roll analysis sheets, material and equipment accounting, control of division finances, preparation of estimates and data for their defense, and clerical work in connection with the records of the section of maintenance.

Requisitions were prepared and approved for the purchase of supplies, tools, and equipment for construction work amounting to \$112,-152.88 and for construction material amounting to \$213,248.63, and vouchers were recorded and approved for payment therefor upon delivery.

Pay rolls were prepared, audited, and approved for payment aggregating \$529,331.11.

Contract construction vouchers were audited and approved to an aggregate of \$1,036,632.77. The highway department was paid

\$81,817.26 for resurfacing over sewer construction work. As a means of reference, all of the foregoing expenditures were recorded by a card-record system.

Complete ledger control was maintained over all appropriations throughout the year and balances in the various appropriations were computed semimonthly and checked with the auditor. At no time during the year did the expenditures exceed the apportioned allotments made the 1st of July, pursuant to the provisions of the anti-deficiency act.

Financial statements were prepared monthly to permit a study of available balances, and through a study of these statements an orderly program of expenditures was arranged and the expenditures were kept within the limits allotted and an overobligation at the close of the year avoided.

Records on all issues of street-car transportation and postage and detailed reports were prepared monthly.

System devised and installed and forms prepared for recording data relevant to garage trap inspections and cleanings.

During the year a special survey was made covering the disposition of crank-case oils by garages, etc., by other cities of the world and report was formulated, typed, and submitted in the form of a recommendation designed to amend the present regulations in this respect in an effort to exclude such oils from the public sewers. This survey included the forwarding of a questionnaire to 70 cities of the United States and 30 foreign countries. The replies were tabulated and digested, also various samples of reclaimed oil were submitted to the United States Bureau of Standards and analyses were received as to the usefulness of the product, as well as a city-wide study of the local conditions which were found to be unsatisfactory.

Daily reports were prepared and submitted to the sanitary engineer covering the following activities:

Construction work in progress on the sewerage system and the sewage-disposal system.

Operation, maintenance, and repair of sewerage system, sewage-disposal system, pumping stations, shops, and yards.

Supervision and inspection of subsurface construction work in progress by various public-service corporations.

The annual partial inspection of trunk sewers was briefed and a detailed report was compiled as to their physical condition, and all defects requiring minor repair jobs were listed.

Twenty-two classification sheets were prepared for appointments and transfers and forwarded to the Personnel Board.

One position was appealed and allowed.

During the year reallocation of grade was granted one copyist.

Graphic charts used in connection with efficiency ratings of classified employees were prepared and submitted as of May 15, 1928. Approved ratings were furnished each employee.

During the year, Maryland made the first direct connection from private premises to District sewer, for which special assessment per front foot will be levied.

A total of 82,296 reports were handled by this section during the year, while the total expenditures by the department totaled \$1,869,572.02.

CONSTRUCTION

The work of this section includes three subsections—(1) surveys, (2) supervision and inspection of all sewers built under contract, and (3) construction by day labor of all minor sewers and their appurtenances.

The duties of subsection (1) include preliminary and detailed survey work in connection with office studies and design and procuring of necessary field data incidental to sewer construction.

Forty and eight-tenths miles of profile were run and plotted, 244 grade sheets were drawn up and filed, 179 assessment plats were prepared and forwarded, and permits for the construction of 130 area drains and 63 garage traps were granted.

The duties of subsection (2) include the supervision and inspection of sewers constructed under contract.

One hundred and nine contracts were worked upon and completed during the year with length and cost, as follows:

Section	Length (feet)	Cost
County west of Rock Creek.....	42,050.74	\$304,964.50
County east of Rock Creek.....	28,279.44	321,700.20
County west of Anacostia River.....	15,699.01	153,276.52
County east of Anacostia River.....	25,707.92	121,795.72
Washington City.....	17,650.35	175,701.60
Total.....	129,387.46	1,077,438.56

The year ended with work in progress on 17 contracts and with 11 contracts awarded on which no work had been done.

The duties of subsection (3) include the construction of minor sewers and their appurtenances and storm-water catch basins by day labor.

The subsection constructed 22,542.54 feet of sewers during the year, section, length, and cost as follows:

Section	Length (feet)	Cost
County west of Rock Creek.....	6,331.59	\$30,896.90
County east of Rock Creek.....	5,180.42	30,351.79
County west of Anacostia River.....	3,667.29	13,367.41
County east of Anacostia River.....	3,089.45	13,810.42
Washington City.....	4,273.79	25,048.88
Total.....	22,542.54	113,475.40

There were also constructed by day labor 476 storm-water catch basins, 187 manholes, 5 alley basins, 121 house lateral connections, 63 Y pipes inserted, 10 manholes adjusted to line and grade, and a few miscellaneous jobs.

Service sewers constructed under contract and by day labor totaled 111,611.94 feet, costing \$430,338.87 and serving 1,006 houses. These figures show the average length of sewer for each house served to be 110.94 feet at an average cost of \$427.77 per house. Although the average length of sewer for each house served is some 12 feet longer than the previous year, the average cost per house was reduced some \$80.89.

MAINTENANCE AND OPERATION

The work of this section is divided into three subsections—(1) maintenance of sewers, (2) operation of the pumping stations, (3) motor transportation.

The duties of subsection (1) include the cleaning of catch basins; attention of complaints; cleaning and flushing of pipe sewers; inspection of tide gates, regulators, sumps, and screens operated in connection with the sewers; inspection of the interior of trunk sewers; collection of data on rainfall and flow in sewers; and assisting the refuse division in removal of snow.

The 5,061 catch basins in the city proper were cleaned on an average of once each 37 days, a total of 49,445 cleanings for the year, removing 9,698 cubic yards of silt, at a total cost of \$22,713.21. The 2,561 catch basins in the county were cleaned on an average of once each 68 days, a total of 13,756 cleanings for the year, removing 3,895 cubic yards of silt, at a total cost of \$10,531.03. These figures show a reduction in cost per basin cleaned of \$0.07 from the previous year. In connection with this activity, but not included in the above statement, 793 cubic yards of silt was removed from garage traps at the expense of the owners, 770 cubic yards of silt were removed from the ink chambers of the Bureau of Engraving and Printing, and 175 cubic yards from other places.

During the year 2,177 complaints were received, approximately two-thirds of which received the attention of the department, the remaining third being connected with activities of other departments or pertaining to private property. These complaints were classified as follows: 198 public sewers obstructed, 344 catch basins obstructed, 63 foul odors from sewers, 15 dead animals in catch basins, 31 lost articles in sewers, 377 obstructed house laterals, 295 basin tops broken, 269 manhole covers broken, 6 accidents, 28 flooded basements, 9 broken alley grates, and 447 miscellaneous complaints. In each case the matter complained of was remedied as rapidly as the facilities of the department permitted and steps taken where possible to prevent repetition of the complaint.

A total of 62.5 miles of pipe sewer were cleaned during the year, 415.7 cubic yards of silt being removed. In connection with this pipe-sewer cleaning 156 basin connections were cleaned, 512 house connections were located and tested, and 180 old sewers examined.

Two thousand and fifty-two miles of pipe sewer and 30,272 manholes were flushed and the flushing force removed 198 obstructions from the sewers.

The 104 tide gates, 17 regulators, 127 sumps, and 8 screens operated in connection with the sewers were inspected a total of 12,415 times during the year.

Inspection of the physical condition of trunk sewers included 114.51 miles of such sewers, and they were generally found to be in good condition with the exception of the east side interceptor, the inside of which has been attacked by sulphates between Langdon and Twenty-first and A Streets NW. Sixteen new manholes have been constructed into this trunk sewer between A Street and Douglas Street NW., to facilitate observation.

The department maintained 14 automatic rain gauges and 164 sewer-cup gauges during the year. These, with the data obtained

from 2 automatic rain gauges of the United States Weather Bureau, give records of great value, permitting the department to remedy conditions of overcharging as appropriations warrant and furnishing data on which designs for new sewers can be based.

Only one snow storm of sufficient intensity to warrant dumping in the sewers occurred during the year, that of January 28, 1928, when 16,986 cubic yards was disposed of through the sewers at various locations.

The duties of subsection (2) include the operation of the steam-driven main sewerage pumping station and the four electrically driven substations; the supervision of machine shop, blacksmith shop, carpenter shop, and paint shop operated in connection with the pumping stations and keeping of records in the study of performance of the stations.

The total pumpage at the stations during the year was as follows:

Main station.....	gallons...	29, 753, 998, 000
Poplar Point substation.....	do....	725, 000, 000
Rock Creek substation.....	do....	847, 014, 000
Woodridge substation ¹	do....	9, 758, 525
Earle Place substation.....	do....	437, 950

Eliminating the last three substations, which deliver their discharge to the main station, the above figures show a mean total daily pumpage of 83,504,104 gallons, slightly less than the previous year.

The total coal consumption at the main station for the fiscal year was 4,423 tons, of which about 18 per cent should be charged to uses by the incinerator, blacksmith shop, and bunker loss, including five serious bunker fires.

There were removed from the sediment chamber 1,404 cubic yards of silt and from the suction conduit 104 cubic yards; 831.86 tons of debris were removed from the screens, pressed and incinerated; 499.74 tons of ashes were removed from the boiler ash pits and 71.77 tons of ashes from the incinerator. All silt and ashes were deposited on the flats of the Anacostia River.

There was only one period of extremely high water in the Potomac River during the year, when the spring thaw brought a rapidly increasing flow culminating on May 2, with a maximum of 184,000 second-feet. The minimum flow, 1,250 second-feet, occurred on three days, September 18 and 30 and October 1; the mean flow for the year, 13,320 second-feet. The maximum range of the tide in the Anacostia River as registered by an automatic gauge was 7.9 feet, the maximum range for one day being 5.3 feet.

In connection with the study of the main station plant made by the Bureau of Mines and following their recommendation the following betterments have been made:

The fronts of four boilers have been moved out to increase the size of the combustion chambers, completing the work commenced last year.

A new economizer was installed; stationary soot blowers were installed in all boilers; a water softener installed to prevent scale formation in the tubes and headers.

The duties of subsection (3) include the supervision and maintenance of all department transportation and the maintenance of all

¹ Flow into this station diverted to Washington suburban sanitary district sewer on June 4, 1928.

internal-combustion equipment. As a matter of administrative convenience the manufacture of basin tops and upkeep of grounds was placed in this subsection during the year.

There were maintained during the year 68 automobiles, 31 passenger-carrying machines, and 37 trucks, 3 tractors, 2 air compressors, motors on 2 tugs, concrete mixers, and gasoline pumps.

The mileage of all automobiles totaled 467,670 miles, 183,830 for passenger-carrying machines and 283,840 for trucks.

During the year 1 truck was replaced, 1 tractor with crane, 4 new trucks, and 6 new passenger-carrying machines added.

The concrete shop turned out 898 basin tops, 1,106 cheek blocks, 396 drip stones, 396 invert blocks, and 2 rain gauge stands.

More garage space is urgently needed.

- J. B. GORDON, *Sanitary Engineer.*

To the ENGINEER COMMISSIONER.

REPORT OF THE WHARF COMMITTEE

SEPTEMBER 1, 1928.

SIR: The wharf committee has the honor to submit the following report for the fiscal year ended June 30, 1928:

Leases of the following tenants expired during the year:

Henry C. Sheridan, foot of N Street SW.

Smithfield, Newport News & Norfolk Steamship Co., foot of N Street SW.

James O. Holmes, foot of Eighth Street SW.

L. A. Clarke & Son, foot of Tenth Street SW.

I. S. Turover, foot of Thirteenth Street SW.

Cranford Co., foot of Thirty-first Street NW.

Smoot Sand & Gravel Co., foot of Q Street SE.

Columbia Sand & Gravel Co., foot of R Street SE.

All of these leases, with the exception of Henry C. Sheridan and the Smithfield, Newport News & Norfolk Steamship Co., were renewed.

The leases of I. S. Turover and the Cranford Co. provided for increased rentals.

New leases were entered into with the Atlantic Utilities Corporation for the dock formerly leased by the Smithfield, Newport News & Norfolk Steamship Co., and with George W. Muller for the space formerly leased by Henry C. Sheridan.

A very disastrous fire occurred at Johnson & Wimsatt's Thirteenth Street wharf on the evening of April 19, 1928, the conflagration entirely destroying the warehouses on the site and partially damaging the timber wharf. The buildings were fully covered by fire insurance. Most of the lumber stock owned by the lessee was totally destroyed and 10 or 12 horses killed. While the destruction was complete, the fire was cleansing in character in that it removed very effectually several huge frame structures which were unsightly and dilapidated and which projected about 12 feet beyond the building line into the street. Moreover, an unfavorable traffic situation on Water Street caused by a projecting corner of one of these buildings has been remedied. The fire débris has been removed from the site.

The commissioners canceled the lease on this wharf on June 15, 1928, and directed the wharf committee to obtain competitive bids for leasing the wharf. These bids will be opened on September 18.

The total revenue derived from rentals including the municipal fish market was \$36,305.89, an increase of \$1,747.44 over the revenues for the last fiscal year.

That part of the water front along the Washington Channel lying between the south curb line of N Street south and Thirteenth Street west is under the control of the Commissioners of the District of Columbia and is used and occupied by the municipal fish market and wharves, the morgue, harbor precinct, headquarters of the fireboat company, workhouse, and sand wharves, all of which are municipal activities; and also by lumber and cordwood dealers, warehousemen, bathhouses, marine railways, and four steamboat companies operating passenger and freight steamers.

The waterfront along the Georgetown Channel is in private ownership with the exception of the termini of streets. The water space at the foot of Thirty-first Street NW., between building lines, is leased by the Cranford Co.

Along the Anacostia River the United States navy yard occupies the frontage on the city side between Second and Eleventh Streets SE. The sewage-pumping station and yard occupies the frontage between First and Second Streets. The intake of the Capital power plant is located at the foot of First Street SE. The only frontage along the Anacostia River under lease is that between the building lines of Q and R Streets SE.

Repairs were made last spring to the docks leased by the Mount Vernon & Marshall Hall Steamboat Co., and James O. Holmes, the lessees bearing all the expense.

Repairs are in progress at the Harbor Precinct wharf, \$700 having been expended up until July 1, 1928, in repairing concrete footings, replacing timber runway, timber curbs, and repairing and painting the fence. Two thousand five hundred dollars for this work was appropriated in the second deficiency act, fiscal year 1928, approved May 29, 1928.

Bids will be opened on September 26, 1928, for reconstructing the morgue wharf. The District of Columbia appropriation act for the fiscal year ending June 30, 1929, contains an appropriation of \$6,000 for this purpose. The existing bearing piles show sufficient decay to indicate a loss of from 25 to 80 per cent in their structural value. Pile caps, sills, and posts are positioned without uniformity and are sway-braced with a miscellaneous collection of timbers of doubtful value.

Funds are also available for repairing and rehabilitating the workhouse wharf at the foot of Ninth Street SW. About 200 feet of this wharf is in need of repair. The estimated cost is \$4,500. The maintenance of this wharf in a first-class state of repair is very essential, since brick and other products manufactured at the District of Columbia workhouse and reformatory at Occoquan and Lorton, Va., for use in the construction of municipal buildings, sewers, etc., are shipped to this dock by barge.

The commissioners have directed that the District of Columbia sand and gravel wharf be abandoned for the receipt of sand and gravel from contractor's plants on the river. One of the reasons which prompted

this decision was the fact that the wharf is in a decayed condition, requiring an expenditure of \$11,000 or \$12,000 to rebuild the timber portion of the dock. No decision has been reached as to the future use of this wharf. If money were available for repairs, the wharf could probably be used very advantageously by the workhouse authorities or reserved as a public wharf for the discharge of vessels' cargoes at prescribed wharfage rates.

The commissioners, under date of February 28, 1928, directed the wharf committee to assume jurisdiction over the use of public space by the Washington & Old Dominion Railway Co. and the Arlington & Fairfax Railway Co. on the Rosslyn, Va., approach to the Key Bridge. Both of these companies maintain terminals, trackage, waiting rooms, and unloading platforms on this reservation under authority of short-term leases entered into with the District Commissioners.

The Washington & Old Dominion Railway Co. pays an annual rental of \$675 and the Arlington & Fairfax Railway Co. \$335 a year.

The future improvement of the approaches to the Key Bridge in a manner in keeping with the dignity and grandeur of this bridge is a matter worthy of careful study by the National Capital Park and Planning Commission. The reservation on the Virginia end of the bridge is adapted to a more attractive development than now exists. The roadway pavement is in such condition as to warrant its early replacement.

In the wharf committee's annual report for the last fiscal year attention was called to the fact that a preliminary survey, together with estimates of costs, for the development and improvement of the water front along the north side of the Washington Channel, as directed by Congress in the act approved March 3, 1925 (Public No. 585, 68th Cong.), had been submitted to the Chief of Engineers by the United States Engineer Office, which data, it was thought, would be transmitted to Congress some time ago. The wharf committee desires to point out that many of the existing structures along the Washington Channel have reached such a stage of deterioration that shipping interests are not attracted to this port. Several of the wharves have been condemned as unsafe, and a further delay in beginning the work of improvement will unquestionably result in further condemnations and add to the existing dilapidated and unsightly conditions.

West coast lumber shipped to Baltimore by water and thence transported to Washington by rail costs over \$3 per 1,000 feet board measure more than would be the cost if the lumber were shipped direct to Washington by water. It is believed that if the frontage along the Washington Channel were improved with new and more commodious docks in accordance with the project of the United States Engineer Office this lumber and other cargoes would be delivered direct to Washington by water with an attendant saving to Washington consumers.

The item for the improvement and beautification of the north side of the Washington Channel heads the list of desirable improvements in the District of Columbia. When one considers the very attractive water front development of European capitals as compared with the water front on the Washington Channel, the fact that such a condition exists in the National Capital is difficult to understand. With

the exception of a few structures, this water front presents a forlorn picture of sad neglect. It is hoped that Congress will soon receive the report on this project, that it will be adopted promptly, and that funds for beginning this much-needed improvement will soon be appropriated.

ROLAND M. BRENNAN,
C. R. WHYTE,
WM. P. HESS,

Wharf Committee, District of Columbia.

To the ENGINEER COMMISSIONER.

REPORT OF THE INSPECTOR OF BUILDINGS

AUGUST 30, 1928.

SIR: I submit herewith the annual report of the building inspection division for the fiscal year ended June 30, 1928.

The report includes no record of building operations conducted by the Federal Government or by the District of Columbia government.

Statement of permits issued from July 1, 1927, to June 30, 1928

	Number	Value		Number	Value
Brick:			Concrete:		
Dwellings.....	1, 130	\$8, 153, 265	Dwellings.....	26	\$139, 300
Apartments.....	59	11, 164, 000	Garages.....	111	47, 300
Garages.....	260	180, 090	Stores.....	3	15, 500
Stores.....	146	1, 637, 200	Office.....	1	5, 000
Offices.....	15	1, 461, 900	Silos.....	7	1, 000
Public garages.....	9	208, 000	Shed.....	1	4, 000
Gas stations.....	14	75, 500	Print shop.....	1	20, 000
Warehouses.....	13	743, 500	Public garage.....	1	200, 000
Churches.....	11	1, 372, 850	Repairs.....	62	55, 025
Banks.....	3	1, 325, 000	Tile:		
Boiler rooms.....	2	38, 000	Dwellings.....	38	287, 050
Embassies.....	2	940, 000	Garages.....	36	36, 295
Schools.....	4	232, 000	Stores.....	5	12, 500
Convents.....	2	92, 000	Public garage.....	1	9, 000
Shops.....	4	24, 200	Repairs.....	8	20, 880
Telephone exchange.....	1	520, 000	Metal:		
Laundries.....	2	50, 000	Garages.....	1, 021	152, 675
Greenhouses.....	3	10, 300	Sheds.....	20	4, 640
Market.....	1	75, 000	Repairs.....	1	3, 000
Power houses.....	2	304, 000	Tanks.....	1	4, 300
Hospital.....	1	5, 000	Bins.....	1	28, 000
Hotel.....	1	1, 500, 000	Frame:		
Stable.....	1	50, 000	Dwellings.....	308	1, 624, 525
Post office.....	1	30, 000	Garages.....	260	75, 920
Auditorium.....	1	43, 000	Sheds.....	28	5, 065
Theaters.....	2	50, 000	Churches.....	2	10, 500
Dormitory.....	1	400, 000	Repairs.....	579	245, 490
Restaurant.....	1	20, 000	Machinery:		
Repairs.....	1, 889	2, 240, 015	Motors.....	998	232, 100
Stone:			Elevators.....	104	532, 880
Dwellings.....	37	865, 125	Boilers.....	13	9, 775
Garages.....	8	13, 650	Engines.....	2	47, 000
Store.....	1	30, 000			
Repairs.....	32	24, 855	Total.....	7, 197	37, 736, 170

Distribution of improvements in sections

	Buildings	Repairs, etc.
Northeast.....	\$4, 270, 395	\$473, 410
Southeast.....	1, 268, 815	182, 430
Northwest.....	28, 161, 590	2, 964, 040
Southwest.....	350, 750	64, 740
Total.....	34, 051, 550	3, 684, 620
Repairs, etc.....	3, 684, 620	-----
Grand total.....	37, 736, 170	-----

Comparative statement for years 1927 and 1928

	Repairs, etc.	New buildings	Dwell- ings	Apart- ments	Business buildings
1928.....	5,019	2,178	1,539	59	580
1927.....	4,926	3,285	2,477	109	699
Decrease.....	193	1,107	938	50	119

¹ Increase.*Estimated number of buildings in the District of Columbia¹*

	Brick	Stone	Concrete	Tile	Frame
1928, erected.....	1,687	46	143	79	310
1928, razed.....	262		1	1	168
Total.....	1,425	46	142	78	142
Add total as of 1927.....	86,018	139	883	615	31,130
Grand total.....	87,443	185	1,025	693	31,272

¹ This estimate is necessarily broad, data for an accurate estimate not being available.*Comparative statement for past six years*

Year	Repairs, etc.	New buildings	Dwell- ings	Apart- ments	Business buildings	Number of permits	Value
1923.....	5,938	3,478	2,460	81	937	12,191	\$57,690,038
1924.....	5,356	3,012	2,079	81	852	11,446	39,403,207
1925.....	5,584	5,319	4,129	120	1,078	11,993	62,862,980
1926.....	5,520	5,066	4,135	173	758	11,574	63,599,280
1927.....	4,926	3,285	2,477	109	699	10,798	49,776,865
1928.....	5,019	2,178	1,539	59	580	9,802	37,736,170

From the foregoing figures it can be seen that building activities suffered a decrease of \$12,040,695 as compared with the figure given for last year. While the decrease is evident in so many dollars of construction, yet from an administrative and inspectional standpoint the work has remained about the same. Comparing the amount of building operations for the year 1928 with that of 1924, which is considered normal for building activity within the District of Columbia, shows a decrease of but \$1,667,037.

The decrease is due in a large measure to the fact that building operations are becoming more stable, there being very little speculative building in progress. The greater amount of building operations consists of the repair and remodeling of buildings requiring constant and detailed inspection.

The number of permits issued during the past year, 9,802, as compared with that of the preceding year, 10,798, shows a decrease of only 996.

HOUSING ACCOMMODATIONS

There were issued during the fiscal year in question permits for 1,242 one-family houses, a decrease of 1,155, compared with the figure of last year; 9 two-family houses, a decrease of 17, and 1 three-family house. Permits for the 59 apartments disclose that they would accommodate 1,911 families.

SIGNS

During the fiscal year permits for 1,651 signs were issued (a decrease of 432 compared with 1927), 1,332 of which were 50 square feet or under; 305, 51 to 100 square feet; and 18 exceeded the maximum limit of 100 square feet as allowed under the provisions of the sign regulations for which approval of the commissioners was necessary prior to the issuance of permits. The materials of which these signs were made consisted of wood, metal, canvas, and many combinations of wood and metal as well as being painted on the wall. There were 1,539 the materials of which consisted of wood, metal, or paint; 74 signs of canvas and 24 roof signs. Among the 14 signs having miscellaneous material, the greater majority consisted of glass (barber poles) and metal and glass.

The decrease in the number of signs issued is due, in no little measure, to the fact that this office has inaugurated during the past year a campaign toward limiting the square footage of sign area on a building to 100 square feet, making inspections of the building upon which the sign is to be placed to determine the number of square feet of sign area already existing.

ELEVATOR BUREAU

During the past fiscal year 2,689 triyearly inspections were made by the inspectors of this section, showing a decrease in figures as compared with last year of 199. It is to be noted, however, that this section has been greatly handicapped by the prolonged illness of one of the inspectors who was injured in an automobile accident, and the injury to another occurring during the course of an inspection. The chief elevator inspector is intrusted with the follow-up of repairs (ordered by the other inspectors), complaints, inspections of elevators as to compliance with the new elevator code, and the testing and approval of 117 new installations, 84 of which were passenger elevators and 33 being freight elevators, an increase in the number of new installations as compared with the figure given for last year of 19.

Checks totaling \$3,126.25 were received paying for 2,501 inspections, the cost of inspection being \$1.25 per elevator. During the fiscal year 1,051 licenses for the operation of elevators were issued.

Of particular note is the fact that this bureau inspects the elevators in the Government buildings, there being 34 buildings housing 86 elevators. While this office is without authority to enforce its recommendations and suggestions relative to elevators in the Government buildings, yet in all cases compliance with the notices of this office is effected.

Unfortunately, 7 accidents occurred on elevators during the past year, 4 of which occurred on passenger elevators and 3 on freight elevators. But one of these accidents proved fatal, six persons having been injured. Examination and investigation shows that in but one instance was the accident due to faulty mechanism.

This bureau is pleased to report that the elevators generally throughout the city have or are being equipped in accordance with the provisions of the new elevator code, promulgated on July 1, 1925. In those cases where compliance has been refused this office is preparing to take the owners into court.

OCCUPANCY PERMITS

During the fiscal year 1928, there were issued 3,179 certificates of occupancy permitting the use of a building for commercial purposes as provided for under the zoning regulations, an increase of 308 as compared with the figure of last year of 2,871.

Of the total number issued, 2,381 were for a first commercial use in a first commercial zone; 279 for a first commercial use in a second commercial zone; 126 for a second commercial use in a second commercial zone; 158 for a first commercial use in a residential zone; 158 for a residential use in a residential zone; 19 for a second commercial use on a first commercial zone; 12 for a first commercial use in an industrial zone; 24 for a second commercial use in a residential zone; 20 for an industrial use in an industrial zone; and 2 for a second commercial use in an industrial zone.

FIELD INSPECTORS, REINFORCED CONCRETE INSPECTORS, AND STEEL INSPECTORS

During the fiscal year of which this report has reference there were 43,006 inspections made by all the inspectors in this bureau, 34,236 of which were made by the field inspectors, of which there are 12; and 8,770 of which were made by the reinforced concrete and steel inspectors, of which there are 5.

FIRE ESCAPES, FIRE EQUIPMENT, AND ENTERTAINMENTS

During the past fiscal year 174 inspections were made of public halls, theaters, and hotels, these inspections paying fees in the sum of \$850. Inspections for one-night entertainments were 16, \$16 being paid in fees.

The checking of plans relative to fire equipment for new buildings numbered 74, \$740 being paid in fees. Inspections where buildings were remodeled into apartment houses numbered 12, \$120 being paid in fees. Plans checked as to the layout of electrical fixtures numbered 218, no fee being charged for this service.

There were 2,800 inspections made of new and old apartments and buildings as to the necessity of providing fire equipment to comply with the fire escape law, the source of complaint originating in most instances with the fire department. Following these inspections, 197 commissioners' notices were prepared and forwarded for approval by the commissioners, 195 of these notices being served upon the owner or agent, the other 2 being forwarded by registered mail. Approximately 750 letters dealing with phases within the jurisdiction of this bureau were prepared and mailed. The total number of inspections of this bureau and the fees collected were 2,990 and \$1,726, respectively.

COMPLAINT DEPARTMENT

A total of approximately 4,700 complaints were received in this department during the past fiscal year, an increase of 300 compared with the figure given for last year, approximately 500 coming from the police department, 3,200 from the health department, 80 from the plumbing department, while the other 1,020 came from such sources

as the telephone, mail, and personal appearance. In addition numerous instances of defective conditions of buildings were discovered by the inspectors in the field. The majority of the complaints pertained to dilapidated sheds, steps, porches, floors, walls, and falling plaster. Approximately 4,100 letters were written and served upon the owner or his agent to correct the condition complained of and any other danger or violation found upon investigation. Of this number, practically all notices were complied with, although in approximately 600 cases second and third notices were necessary before compliance was effected. In very few instances was reference to the corporation counsel necessary.

It is difficult to appreciate the vast amount of work done by this department and the service rendered to the public. Each complaint must be carefully investigated, some of which are merely the result of neighborly quarrels, and notices prepared where conditions warrant advising the owner or agent of the necessity for repairing or removing a certain danger or nuisance. After the allotted time in which to effect compliance with the notice served, another inspection must be made to ascertain whether the condition has been remedied and if so, to what extent. In many cases a second and sometimes a third notice as well as the resultant follow-ups are necessary before a dangerous condition will be remedied, and, as stated, in but few instances is it necessary to resort to court action.

FEEES COLLECTED, ALLOTMENTS, AND EXPENDITURES

The building inspection division caused to be paid into the United States Treasury through the collector of taxes, during the fiscal year just ended, the sum of \$61,767.75 in fees for permits, licenses, etc., a decrease of \$12,847.50.

The amount expended for salaries was \$105,236.08, the expenditure for contingent and miscellaneous expenses was \$2,029.64, of which amount only \$220 was expended for street-car tokens out of an allotment of \$600. Because of the small allotment for contingent and miscellaneous expenses it was necessary to either discontinue the requisitions for street-car tokens or those for printing and office supplies, the former course being pursued. The expenditure for motor vehicles was \$2,538, a total expenditure as can be seen from the foregoing figures of \$109,803.72.

At the present, a study is being made for the purpose of amending the schedule of fees charged for permits, inspections, etc., in order to permit this department to operate upon as near a self-sustaining basis as possible.

PLAN EXAMINERS

Among the larger building projects for which plans were submitted and approval given by this division for the issuance of permits during the fiscal year 1928 were a 9-story bank building, 8 church buildings, 16 industrial buildings (garages, print shops, plants, etc.), 5 semi-fireproof apartments, nineteen 5-story apartments, six 8-story apartments, one 11-story apartment, three 12-story apartments, 6 office buildings, 2 movie theaters, 4 schools, an addition to the Potomac Electric Power Co.'s plant, and the British Embassy.

Of the larger projects on file as of June 30, awaiting approval and the issuance of permit, were a 12-story apartment building at 1028

Connecticut Avenue for the Wardman Construction Co. and a 3-story college and dormitory for the Washington Cathedral at 3540 Woodley Road.

SPECIAL INSPECTORS

At the present time there are 30 special inspectors who have qualified for the type of work to be performed in the construction of buildings involving more than 100 tons of structural steel or 20,000 square feet of concrete floor area, or buildings to be used for public assemblage, the fees for the service of the inspector being paid by the owner.

These inspectors have at all times cooperated with this office in having the building erected in accordance with the provisions of the building and zoning regulations and the approved plans on file in this office.

ADVISORY COMMITTEE ON REVISION OF THE BUILDING CODE

This committee is composed of many prominent architects and civil engineers in this city, of which the inspector of buildings is chairman. A few changes in the building code were recommended by this committee to the commissioners for their approval during the year, and at present this committee is carefully studying the necessity for any revisions in the various sections of the code prior to a reprint, an appropriation for which must be awaited from Congress.

It is desired at this time to acknowledge the efficient and competent services rendered by the employees of this department during the period, the work having been performed in a prompt and satisfactory manner.

Respectfully submitted.

JOHN W. OEHMANN,
Inspector of Buildings.

To the ASSISTANT ENGINEER COMMISSIONER.

REPORT OF THE INSPECTOR OF PLUMBING

AUGUST 31, 1928.

SIR: Herewith is the forty-sixth annual report of the operations of the plumbing inspection division of the engineering department during the fiscal year ended June 30, 1928.

There were 27,654 inspections on plumbing work installed; 27,585 inspections in connection with complaints and 2,680 special inspections on restaurant license work; interrogation of witnesses in court cases; settlement of questions of jurisdiction and similar special work. This makes a total of 57,919 inspections made by this office during the year, which was an average of a little less than 13 inspections per day per man. The largest number of inspections made by one man in one day was 26. Plans for the new and remodelled plumbing were filed to an estimated cost of \$2,635,022. It is estimated that the plumbing repairs both of a minor and major nature, installation of additional fixtures (for which plans are not required) would amount to about 25 per cent of this sum, or \$660,000, making a general total of \$3,300,000 value of plumbing work done in the District of Columbia,

exclusive of plumbing work for the United States, District, and foreign governments. In this connection, I want to invite attention to the courtesy of the Office of Public Buildings and Public Parks in requesting the assistance of this office in inspecting their contract plumbing work, and of certain foreign governments that have availed themselves of the services of the office in inspecting work on their projects which, being extraterritorial, would not ordinarily come under the inspection of this office.

COMPLAINTS

Of the 27,585 complaint inspections, about one-half had to do with defective plumbing in old houses and the balance related to defective sheet-metal gutters, leaky roofs, defective surface drainage, damp cellars, and similar matters. Excepting the special inspections, the number of inspections on complaints practically equals the number of inspections on plumbing work proper. These inspections take longer and, therefore, it may be assumed that a greater amount of work in the field was attached to complaints, most of them originating in other offices, principally the health office. More than two-thirds of all office correspondence, indexing and filing, reports, etc., also related to complaints; so that the complaint inspection work really forms the bulk of the public service performed by this office, and a third or less is devoted to work in connection with new buildings.

POLICE COURT WORK

During the year 6 warrants were obtained for violation of the plumbing regulations and 14 warrants for unlicensed plumbers, making a total of 20. One case was dismissed for lack of evidence, and in one case personal bonds were taken. In 6 cases court action was nolle prossed on the work being completed before trial, and 13 fines were entered, totalling \$455. No cases were decided adversely in court.

MUNICIPAL AND PUBLIC WORK

This office assisted the municipal architect during the year in laying out plumbing work on plans for schools, police stations, engine houses, and other public buildings, and inspected the plumbing work as it went in, reporting the results to the municipal architect, and it is believed that this close cooperation with that office is resulting in a high standard of workmanship in our public-building plumbing construction work.

This office also inspected all renewals of connections to relaid public sewers on account of the sewer division and maintained a systematic inspection and reinspection service on garage intercepting traps for them.

REGULATIONS

During the year there were no changes of moment made in the plumbing regulations, but a general revision of the gas-fitting regulations has been in the hands of a special committee which has practically completed the work. The advisability of adopting a regulation dealing with household refrigeration was investigated and a recommendation has been made.

PLUMBING BOARD

The plumbing board held 25 meetings and examined 93 applicants for licenses. Of those examined 25 passed and were granted licenses. This is a 60 per cent increase over last year and nearly three times as many as for the year before that. At the close of the fiscal year there were 257 registered master plumbers in the District, 199 of them being actively engaged in business. There were also five registered gas fitters. This is the same number of licenses in force as in the previous year, the increase of 25 being offset by 7 deaths and several failures.

PUBLIC CONVENIENCE STATIONS

During the year four convenience stations were in operation daily from 6 a. m. to midnight, with two shifts of attendants, each working 9 hours per day. The largest station, that at Seventh Street and Pennsylvania Avenue NW., reported 5,873,300 users; that at Thirteen-and-a-half Street and Pennsylvania Avenue NW., 3,984,180; that at Ninth Street and New York Avenue NW., 3,644,520; and that at Fifteenth Street and Maryland Avenue NE., 2,428,220, making a total of practically sixteen million times these stations were used during the year.

The cash receipts from the use of pay compartments, telephone commissions, public scales, shoe shining machines, etc., amounted to \$5,803.58, being about 20 per cent of the cost of the operation of the stations. These receipts are less than for any previous recent year, but the last months show increases comparable to the corresponding months, so that it is expected that the falling off in receipts is but temporary. Funds are available for the construction of a new station in Georgetown and it is expected that the plans will be under way shortly.

Respectfully,

A. R. McGONEGAL,
Inspector of Plumbing.

To the INSPECTOR of BUILDINGS.

REPORT OF INSPECTOR OF STEAM BOILERS

AUGUST 28, 1928.

SIR: Respectfully submitting herewith the annual report of the inspector of steam boilers for the period from August 26, 1927, to June 30, 1928:

Boilers inspected

Boilers inspected, at \$5 per boiler-----	703
Boilers inspected for the District of Columbia (no fee)-----	97
Total number of boilers inspected-----	800

Exceptional conditions found upon inspections of boilers and reinspections

Defective boiler settings.....	9
Defective steam gauges.....	33
Defective tubing.....	221
Pressures reduced on boilers.....	24
Boilers condemned because of their dangerous condition and constituting a public menace.....	9
Reinspections of boilers for compliance with notices to repair, and notices to comply with the A. S. M. E. boiler construction code.....	192
Total.....	<u>1 488</u>

Statement of receipts and expenditures

Gross receipts from the inspection of 703 privately owned boilers....	\$3, 515. 00
Deduct expenditures—	
Printing.....	\$19. 00
Rubber stamps and steel stencil.....	9. 25
Tools and equipment.....	35. 00
Postage.....	8. 00
Clerical hire.....	30. 00
Transportation and maintenance at \$2 per day (300 days).....	<u>600. 00</u>
Total expenditures.....	<u>701. 25</u>
Net amount of compensation.....	<u>2, 813. 75</u>

Before commenting upon this report, it is desired to respectfully call your attention to the fact that this report represents a period less than the fiscal year, inasmuch as the present inspector of steam boilers took over the duties of this office on August 26, 1927, during the illness of the late Frank Vermillion, for many years the inspector of steam boilers for the District. Because of the failing health of Mr. Vermillion, it was found, upon entry to the position, that numerous calls for inspections of boilers had been unfilled.

During the period this incumbent has held office it has been his practice, unfailingly, to report for duty each day and in the course of a day working 9 to 11 hours. In addition to the long hours daily, the position requires the inspection of boilers on Sundays in numerous large plants in the city where it is impossible to make these inspections during the week because of the necessity for closing their plant and discontinuing business during the interim of the inspection and prior thereto for the cooling of the boiler.

The plants and establishments in which the boilers inspected are located are to be found in the four extreme ends of the city, oftentimes necessitating travel from one end of the city to the other in the course of a day to inspect boilers for which appointments have been made.

The inspector of steam boilers desires to recommend to the commissioners that a regulation be promulgated requiring the engineer or operator of a boiler to notify the inspector of steam boilers at the time the annual certificate for such boiler has expired. This regulation would prevent the possibility of any boiler not being inspected annually, as it has been found that several boilers were operating without an inspection, a record of which could not be found in the files of this office.

P. M. GREENLAW,
Inspector of Steam Boilers.

To the INSPECTOR OF BUILDINGS.

¹ This total is included in the number of boilers in the above tabulation.

REPORT OF PERMIT CLERK, ENGINEER DEPARTMENT

August 15, 1928.

SIR: Report of the operations of the permit clerk's office, giving the number of permits issued during the fiscal year ended June 30, 1928, is submitted herewith:

Water connections.....	2, 175
Repairs.....	990
Specials (no fees).....	152
Sewer connections.....	2, 034
Repairs.....	613
Specials (no fees).....	664
Gas connections.....	2, 230
Repairs.....	382
Mains, lay and repair.....	393
Specials (no fees).....	28
Electric connections and underground construction.....	2, 544
Repairs.....	15
Conduits, lay and repair.....	623
Manholes, build and connect with sewers.....	434
Specials (no fees).....	89
Air pipes, lay.....	4
Fences and hedges to inclose parkings.....	365
Guard stones, placed in alleys.....	6
Pave parkings.....	103
Poles, erect, replace, and remove (telegraph and telephone).....	1, 097
Tanks, install for fuel-oil heating.....	237
Walls, retaining, erect on parkings.....	478
Miscellaneous.....	15
Total.....	15, 671
Permits for work of various kinds in public space.....	6, 688

Fees of \$1 were paid for 14,738 permits; permits issued for which no fees were charged, specials 933 and for work of various kinds in public space 6,688, a total of 22,359 for the fiscal year.

Record cards were made of all files referred to this office, permits issued or reports made and files returned to the divisions having supervision of inspections of work for which the permits were issued.

Applications were filed according to location and reports of the excavations in public space were made for necessary repairs.

H. M. WOODWARD,
Permit Clerk.

To the INSPECTOR OF BUILDINGS.

REPORT OF THE CITY REFUSE DEPARTMENT

AUGUST 21, 1928.

SIR: I have the honor to submit the following report of the operations of the city refuse department for the year ended June 30, 1928:

This division has two main functions. One to keep the streets clean and the other is to serve the householders in the collection and disposal of all their household wastes. For the year just ended the appropriation for cleaning was \$475,000, and that for the removal of refuse, \$900,000.

Of the methods used to carry on this cleaning of streets, flushing was used to a greater degree than heretofore. The department is equipped now with 12 flushers, so that this work is carried on day and night until the weather gets too cold, when these flushers are equipped with snow plows and held in the barns in readiness to turn out on short

notice. During the past winter they proved an effective and satisfactory means of keeping the roadways open and passable. There were two snows, one early in December and the other late in January, the latter being severe and expensive to handle. The cost of this snow removal was borne by the appropriation for cleaning, and no additional funds were secured from Congress to reimburse the street-cleaning fund.

The tables accompanying this report show the cost of the various methods used in cleaning, and there is also a table indicating the quantities of refuse collected and disposed of.

At the garbage disposal plant a total of 3,156,000 pounds of grease was produced, which yielded a revenue of \$185,551.13. At the trash plant the material salvaged there sold for \$61,600.90, and the hides from dead animals for \$2,012, so that the total revenue of this department last year was over \$250,000.

For some time there has been much complaint of the smoke and smell arising from the burning of paper and other combustible material on the city's dumps. Dumping of such material is no longer allowed by the District Engineer on the property controlled by his office adjoining the Benning Road. Similar action could be taken at the dumps controlled by the commissioners if other means of disposal were available. The solution of this problem is the construction of an incinerator for this purpose.

For the low unit costs secured, and the generally satisfactory results accomplished during the past year I wish to record my acknowledgment to the employees of this division.

MORRIS HACKER,
Supervisor, City Refuse.

To the ASSISTANT ENGINEER COMMISSIONER.

Table showing comparative data in connection with street-cleaning work, 1924 to 1928

	1924	1925	1926	1927	1928
SQUARE YARDS CLEANED					
Hand patrol.....	1,563,035,000	1,504,989,000	1,603,576,000	1,739,011,000	1,707,576,000
Machine, horse.....	64,673,000	62,171,000	63,627,000	70,843,000	117,465,000
Machine, hand.....	51,619,000	49,077,000	47,678,000	60,126,000	-----
Alley cleaning.....	85,716,000	92,676,000	94,781,000	103,250,000	113,828,000
Suburban streets.....	38,259,000	41,383,000	50,794,000	57,831,000	61,818,000
Squeegeeing.....	46,387,000	-----	-----	-----	-----
Motor flushing.....	89,246,000	323,825,000	566,451,000	705,056,000	771,793,000
DIRECT TOTAL COST					
Hand patrol.....	\$205,551.42	\$213,380.68	\$198,294.05	\$211,723.96	\$207,177.05
Machine, horse.....	21,312.26	20,767.74	21,411.41	22,622.29	31,790.69
Machine, hand.....	13,538.78	11,247.17	9,899.26	10,567.10	-----
Alley cleaning.....	53,227.77	53,238.58	56,616.73	58,839.96	57,087.95
Suburban streets.....	20,776.27	21,369.26	25,147.79	25,894.34	25,304.14
Squeegeeing.....	7,772.83	-----	-----	-----	-----
Motor flushing.....	9,728.74	24,773.56	38,237.62	50,299.00	48,868.23
COST PER 1,000 SQUARE YARDS					
Hand patrol.....	\$0.131	\$0.142	\$0.124	\$0.122	\$0.121
Machine, horse.....	.350	.334	.337	.319	.271
Machine, hand.....	.262	.229	.208	.176	-----
Alley cleaning.....	.622	.575	.598	.571	.509
Suburban streets.....	.542	.516	.495	.447	.410
Squeegeeing.....	.169	-----	-----	-----	-----
Motor flushing.....	.109	.077	.0675	.0714	.0634

Table showing comparative data in connection with disposal of all city waste from 1924 to 1928

NUMBER OF UNITS COLLECTED

	1924	1925	1926	1927	1928
Garbage..... tons.....	75,089	72,927	68,907	77,554	72,646
Ashes..... cubic yards.....	151,272	154,982	168,280	165,388	161,822
Miscellaneous refuse..... do.....	186,907	197,890	215,320	236,519	245,892
Night soil..... barrels.....	16,063	17,727	18,653	18,648	18,654
Dead animals..... number.....	34,764	43,609	43,624	47,064	44,976

TOTAL NET COST

	1924	1925	1926	1927	1928
Garbage.....	\$235,235.01	\$200,292.77	\$186,530.56	\$288,783.28	\$243,984.85
Ashes.....	131,589.11	133,484.49	137,893.99	123,711.99	130,367.21
Miscellaneous refuse.....	84,139.49	101,539.75	130,733.18	135,950.48	150,214.12
Night soil.....	24,000.00	24,000.00	24,000.00	22,600.00	22,600.00
Dead animals.....	4,911.81	4,668.84	7,126.34	9,308.85	5,214.12

Miscellaneous data on contracts

Class of waste	Contractor	Period of contract	Date of expiration	Price per annum	Collected from—
Night soil.....	Warner Stutler....	3 years..	June 30, 1929	\$22,600.00	All privies in the District.

Cost of street cleaning

[July 1, 1927, to June 30, 1928]

	Area (square yards)	Cost	
		Total	Unit per thousand
Machine cleaning, horse.....	117,465,000	\$31,790.69	\$0.271
Alley cleaning.....	113,828,000	57,987.95	.509
Suburban cleaning.....	61,818,000	25,304.14	.410
Hand patrol.....	1,707,576,000	207,177.05	.121
Motor flushing.....	771,793,000	48,868.23	.0634
Annual overhead.....		1,548.92	
Property accounting.....		8,643.49	
Dump men.....		4,151.38	
Waste-paper boxes.....		4,997.07	
Sunday cleaning.....		3,606.89	
Snow and ice.....		23,777.71	
Dust prevention, oiling.....		15,000.00	
Total.....		432,853.52	

REPORT OF THE ELECTRICAL ENGINEER

SEPTEMBER 29, 1928.

SIR: The annual report of the operations of the electrical department for the fiscal year ended June 30, 1928, is respectfully submitted herewith.

FUNCTIONS

The work of the electrical department includes (a) the street lighting, electric and gas, designation lights and signs indicating location of fire-alarm boxes, etc., and street designation signs; (b)

the municipal signals and communication system; (c) the regulation of production (except by public-utility companies), use and control of electricity and installation of wires and apparatus for electric light, heat and power purposes in the District of Columbia, the regulation of poles and overhead wires in public space, and (jointly with other divisions concerned) regulation of underground electrical constructions in public space; (d) consultation and advisory service to other departments and divisions of the District government.

STREET LIGHTING

The street-lighting system at the beginning of the fiscal year consisted of 24,973 lamps, 11,136 gas and 13,837 electric (906 arc, 12,931 incandescent); on June 30, 1928, there were in service 26,348 lamps, 10,016 gas and 16,332 electric (1,292 arc, 15,040 incandescent), a total net increase of 1,375 lamps, compared with 1,587 in 1927 and 819 in 1926. Of the 5,207 lamps newly connected (gross, 3,832 having been discontinued), 645, about 12½ per cent, were either designation lamps or of the next lowest powered gas or electric. This percentage compares with 17, 35, and 46 for the prior years, 1927, 1926, and 1925, respectively, indicating the growing proportion of larger and more efficient and economical units. The increase in aggregate candlepower of the street-lighting system is from, approximately, 4,357,000 to, approximately, 6,037,000, about 38½ per cent, compared with about 53 per cent and 30 per cent in the two next previous years. The increase in annual charges is, however, only about 19 per cent. The total gas lighting has been, on the other hand, reduced by nearly 11 per cent, and from about 24 per cent to about 15½ per cent of the total candlepower. The 24 per cent gas portion of total installation as of June 30, 1927, bore 32¼ per cent of the total annual rate charges, while the 15½ per cent gas portion of total installation as of June 30, 1928, bore 24¼ per cent. The cost, in annual rate charges, on the total installation as of June 30, 1928, was at the rate of 11.97 + cents per candlepower-year, compared with 13.92 — cents on that as of June 30, 1927.

The approved project of improved lighting has been further advanced, with continued special attention to arterial highways and to anticipation of paving. Plans are made for comprehensive treatment of areas, as distinguished from through lines of thoroughfare.

ARC LIGHTING

There has been an increase of 719 in the number of 6.6-ampere magnetite arc lamps to 1,236 and a decrease of 333 in the number of 4-ampere magnetite arc lamps to 56, a net increase of 386 in the total number of arc lamps to 1,292. There remain yet to be replaced 56 of the less efficient 4-ampere arc lamps. Lamps of the best type, on new design ornamental posts have been installed during the year on Pennsylvania Avenue NW. from Seventeenth to Twenty-seventh Streets (not including Washington Circle); on North Capitol Street, from D Street to Florida Avenue; on Fourteenth Street, from Water Street SW., to Newton Street NW. (not including Thomas Circle), the very effective duplex arrangement being applied on the portions Pennsylvania Avenue to H Street, and Harvard to Monroe Streets; on New York Avenue NW., from Ninth to Fifteenth Streets; on

Fifteenth Street NW., from Treasury Place to New York Avenue; on Seventh Street, from L Street SW. (from P Street contemplated), to Massachusetts Avenue NW., and from New York Avenue to Florida Avenue NW.; and on Fourth and Four-and-a-Half Streets, from Pennsylvania Avenue NW. to P Street SW.

INCANDESCENT ELECTRIC LIGHTING

The number of incandescent lamps added (other than designation lamps) is 4,311 (54 of 1,000, 505 of 600, 1,041 of 400, 2,189 of 250, 21 of 100, and 501 of 60 candlepower); discontinued, 2,276 (3 of 1,000, 5 of 600, 32 of 400, 323 of 250, 1,149 of 100, and 764 of 60 candlepower), a net increase of 2,035. The total number of incandescents (other than designation lamps) connected June 30, 1928, was 14,650, compared with 12,615 at the close of the preceding year. Of the less economical sizes, 100-candlepower and 60-candlepower, which will have little place in the completed new project, 1,913 were discontinued, but 522 were added, reducing the total of these sizes by 1,391, to 6,044, of which 1,648 are connected on underground, and 4,396 on overhead wires. Prominent items of the new incandescent lighting are: Seventeenth Street NW., from B Street to Pennsylvania Avenue and from K Street to Massachusetts Avenue; Delaware Avenue NE., from Union Station Plaza to C Street; Pennsylvania Avenue SE., from Second Street to Bridge; New Jersey Avenue NW., from C Street to Florida Avenue; East Capitol Street, from Second to Eleventh Streets; Maryland Avenue SW., from First to Seventh Streets; Washington, Iowa, and Sheridan Circles; Wisconsin Avenue NW., from Q Street to Massachusetts Avenue; Sixth Street SW. and NW., from Water Street to Florida Avenue; Fourteenth Street NW., from Newton to Kennedy Streets; Nichols Avenue SE., from Anacostia Bridge to Upsal Street; Good Hope Road SE., from Nichols Avenue to Naylor Road; Minnesota Avenue SE., from Good Hope Road to Eighteenth Street; New York Avenue, from Seventh Street NW., to Florida Avenue NE., Sherman and New Hampshire Avenues NW., from Florida to Georgia Avenues; Vermont Avenue NW., from Iowa Circle to Florida Avenue; Georgia Avenue NW., from Trumbull Street to New Hampshire Avenue; Michigan Avenue and Monroe Street NE., from North Capitol Street to Rhode Island Avenue; Park Road NW., from Park Place to Piney Branch Parkway; Fifteenth Street, from Pennsylvania Avenue SE., to H Street NE., Benning Road NE., from Fifteenth Street to Railroad Viaduct; Kenilworth Avenue NE., from Benning Road to District line; P Street NW., from Dupont Circle to Thirty-sixth Street; Eighth Street, from Florida Avenue NE., to Pennsylvania Avenue SE.

MANTLE GAS LIGHTING

The number of gas lamps added was 81, discontinued, 1,135, a net decrease of 1,054. The total gas lamps connected June 30, 1928, was 9,759 (9,202 60-candlepower, 557 120-candlepower) compared with 10,813 (10,040 60-candlepower, 773 120-candlepower) at the close of the preceding year. The 60-candlepower are single burner, the 120-candlepower double burner. In total mantles there were

10,316 connected June 30, 1928, compared with 11,586 at the close of the preceding fiscal year, a decrease of 1,270, compared with a decrease of 1,043 and an increase of 565 mantles, in the two next preceding years.

DESIGNATION LAMPS

The number of designation lamps added was 75 (all electric), discontinued 67 (66 gas, 1 electric), a net increase of 8, compared with a net increase of 18 and a net decrease of 13 in the next two preceding years. The numbers of designation lamps connected June 30, 1928, was 647 (257 gas, 390 electric), compared with 639 (323 gas, 316 electric) at the close of the preceding year. The number of gas designation lamps has been reduced by 66, notwithstanding the total increase.

LIGHTING ALONG STEAM RAILROADS

The claims against certain railroad companies for payment of sums expended for lighting of streets, avenues, etc., adjacent to their several rights of way have been adjusted and paid by agreements entered into between the companies and the Commissioners of the District of Columbia, and there are no longer any outstanding claims on this account.

SIGNALS SYSTEM

The signals system comprises (a) the municipal central-office fire-alarm-telegraph system, (b) the police-patrol signal system, consisting of 14 groups of distributed signal stations, each centering at a police station, and (c) the municipal telephone system; of this latter, one six-position and two two-position P. B. X. class C switchboards, with 56 trunk lines, four interdepartmental tie lines, etc. (located in the District Building), and 13 P. B. X. class B switchboards (each located at a police station), constitute the nucleus, which apparatus, with upward of 1,800 sets of telephone instruments (transmitter and receiver), are rented from and maintained by Chesapeake & Potomac Telephone Co. The desk stands, wall boxes, cords, and connecting station lines, in the District Building and radiating from that building to and in other buildings to the telephone instruments, are owned, installed, and maintained by electrical department. Of the two two-position switchboards in the District Building, one is the fire-department auxiliary, serving that department for general administrative purposes but is located in fire-alarm headquarters, and is an integral part of the fire-alarm system, supplemental to the telegraph code signalling, and, like the six-position board, is operated by electrical department personnel; the other is police headquarters' switchboard, there located, and operated by police department personnel. The three switchboards are intimately tied, providing much flexibility of routing. The three sections are joined in a common system of characteristic lead-covered, dry paper tape insulated cables, for general distribution, in very large proportion underground.

Fire alarm boxes added to the system during the year number 31 (23 public and 8 private); 4 boxes (1 public and 3 private) were discontinued, a net increase of 27, to a total in service June 30, 1928, of 942 (747 public and 195 private). Seven existing boxes were changed from overhead to underground connection. Boxes connected underground were increased by 30, to a total of 808, and boxes connected

by overhead wires were decreased by 3, to a total of 134. A "private" box is one so located as to especially serve some special interest, not freely accessible to the public in general, and for which the cost of the immediate installation, including box, and of connection to nearest available circuit, is borne by the specially interested party.

The number of public boxes, 23, added to the system, compares with 33, 33, 29 and 15, in the four preceding years. There is need of more rapid extension of fire-alarm system in the suburbs. The latest report of National Fire Prevention Association on survey of the city of Washington repeats the expression in earlier reports of some years previous, commendatory as to the down-town section but severely critical as to the residential suburban area. There appears a tendency to assume that the wide distribution of telephone facilities renders more liberal distribution of fire-alarm boxes unnecessary. Experience here and elsewhere does not sustain the position; notwithstanding special skill in translating messages from excited persons, it frequently happens that a telephone call is not competent.

Careful and continuous inspection, maintenance, and repair service on the apparatus and connecting wire system has been maintained. The system weathered the recent exceptional storm and rainfall conditions, with very little disturbance. Each fire-alarm box was tested repeatedly during the year, contact points cleaned and mechanism proven to be, or made to be, in good order. The tests totaled 3,915. Circuit tests are made at headquarters systematically twice a day and frequently on occasion.

The number of fire alarms of all kinds received and transmitted through fire-alarm headquarters was 3,747, compared with 3,494, 3,983, 2,908, and 2,711 in the four next preceding years; this includes 43 "additional" alarms (23 second, 11 third, 5 fourth, 3 fifth, and 1 special), compared with 27 "additional" alarms (17 second, 8 third, 1 fourth, and 1 fifth) in the next preceding year. It also includes 299 false alarms (217 box and 82 local), compared with 379, 297, 227, and 278 in the four next preceding years, the false box alarms, 217, being above 14 per cent of the total regular box alarms (1,500), compared with 20, 13, 13, and 16 in the four next preceding years. The number of police-patrol boxes added was 12, a net increase, compared with net increases of 9, 8, and 12 in the three next preceding years, making the total connected June 30, 1928, 530; of these, 437 are connected on underground and 93 on overhead wires; compared with 518 (422 underground and 96 overhead) in the preceding year; all 12 new boxes were connected underground and 3 changed from overhead; 2 of the new boxes were so connected as to serve 2 stations each. It is gratifying that provision has been made for modernizing the remaining portion of the old and obsolete system.

The number of telephones added, connected to the two switchboards under the operating jurisdiction of this department (the main District of Columbia P. B. X., Main 6000, and the fire-alarm headquarters' P. B. X., Main 20), was 20, and 9 were discontinued, a net increase of 11, compared with 6, 19, 11, and 15 in the four next preceding years. Connected to other District P. B. X. switchboards, nearly all of which are tie-line connected to Main 6000, 8 were added, and 7 disconnected, and in the police-patrol service 12 were added.

The number of telephones of the entire District of Columbia system was increased by 24 (compared with 68, 64, 39, and 75 in the four

next preceding years), to a total connected June 30, 1928, of 1,820, exclusive of 29 portable sets in service, the property of the District of Columbia, used by the fire department and the electrical department, in field service.

The number of cells of storage battery in service on fire alarm, police patrol, and local circuits remains at 2,692, as last previously reported.

The distribution equipment for the composite signals system (fire-alarm, police-patrol, and telephone) has been affected by the installation of approximately 9.88 miles of underground cables containing 482.24 miles of conductor, the withdrawal of 0.24 mile of underground cable, containing 4.53 miles of conductor, and the withdrawal of 0.33 mile of aerial cable, containing 7.86 miles of conductor; a net increase of approximately 9.64 miles of underground cable, containing 477.71 miles of conductor, and a decrease of aerial cable and conductor, as above stated.

Grand total of composite distribution in service June 30, 1928, 220.14 miles cable; 8,727.12 miles conductor (8,545.22 miles underground, and 181.9 miles overhead); i. e., practically 98 per cent of our signals distribution conductor is underground. But it is in general on too narrow a margin of reserve capacity.

The utilization of radio communication in certain municipal functions is being further considered.

POLES AND OVERHEAD WIRES

The regulation of the erection of poles, the stringing of overhead wires, and the maintenance of same in safe condition in the streets and other public spaces has been carried on in accordance with law and regulations.

The various wire-using companies have, during the year, newly erected 1,044 line and guy poles and 463 anchors; have moved, replaced, and reset 1,206 line and guy poles; and have taken down and removed 234 line and guy poles and 75 anchors, resulting in an aggregate net increase during the year of 810 poles (749 line and 61 guy), bringing the record total of electric poles on June 30, 1928, to 28,324 (26,555 line and 1,769 guy).

The list of pole owners comprises the United States, the District of Columbia, and 15 companies (the steam railroads being lumped as one); more than 82 per cent of the poles are owned and all of the record increase is by two of the companies, Chesapeake & Potomac Telephone Co. and Potomac Electric Power Co., in about a 60-40 ratio; the activities in erecting, taking down, moving, replacing, and resetting are confined to five of the parties; one only, the District of Columbia, effected a decrease, taking down 6, of 469. The United States owns 298, and the District of Columbia owns 463 of the 28,324 poles of record, a combined Government ownership of less than 3 per cent of the total. The increase of total, 810, compares with 1,940, 1,724, and 794, of the three next preceding years; one telephone pole has been erected and 5 taken down in streets and avenues within "the prescribed area," a decrease of 4, compared to decrease by 3 and increase by 1 and 1, in each of the three next preceding years. It seems certain that a joint use arrangement by and between the two most active companies is serving to restrict increase of pole plant.

ELECTRIC INSPECTION—WIRES AND APPARATUS

In the operations under the act of Congress to regulate electric wiring in the District of Columbia, approved April 26, 1904, and the regulations thereunder:

The total number of permits issued in connection with the installation of wires and apparatus on private property was 12,639, compared with 14,144, 15,267, 13,109, 9,495, 8,029 and 6,217, in the seven next preceding years.

Fees paid to the collector of taxes, \$24,390.10, compared with \$24,372.55, \$23,912, \$21,290, \$16,264, \$16,164, \$13,861, and \$11,626 in the seven next preceding years.

Number of inspections recorded, 30,072, compared with 29,793, 23,212, 25,418, 21,827, 22,817, 17,284, and 16,170 in the seven next preceding years.

Following the rather comprehensive revision of electric-wiring regulations in the next previous year, which brought them in general as closely as desirable into conformity with National Electrical Code, a few items of revision have been applied in the past year; in most cases to clarify; in one matter, to make more restrictive, because consistency indicated; in another matter, to liberalize, reducing installation cost, after full consideration of relative hazard.

It is obviously too soon to draw any fixed conclusions on the effect of the change in permit fee scale. Fluctuations in electric-wiring business are not of the same amplitude nor in phase with those of the general market.

MISCELLANEOUS WORK

The electrical department prepared plans and specifications for electric wiring, etc., in the following District buildings: Reno pumping station; Public Library (Washingtoniana room, main building); health department clinic (specification only).

The department also cooperated with the municipal architect and with other heads of department, determining most advantageous schedule of service rate on new electric service, of change of schedule with change of use conditions in old installations, reading of meters, partial audit of vouchers, inspecting, testing, advice on purchases, etc.

WARREN B. HADLEY,

Electrical Engineer, District of Columbia.

To the ASSISTANT TO THE ENGINEER COMMISSIONER.

REPORT OF THE MUNICIPAL ARCHITECT

AUGUST 27, 1928.

SIR: I have the honor to submit herewith the following report of the operations of the office of the municipal architect for the fiscal year ended June 30, 1928.

The work in the municipal architect's office consists of the preparation of plans, specifications, and superintendence of the construction of all buildings erected by the District of Columbia, consisting chiefly of schools, fire-engine houses, police stations, hospitals, and, in

addition, the preparation of drawings and estimates for new buildings and repairs to existing buildings for the various municipal institutions, such as the Home for the Aged and Infirm, at Blue Plains, the National Training Schools for Boys and Girls, and the District Training School at Laurel, Md. Plans for all buildings are submitted to the Commission of Fine Arts for approval before work on contract plans is begun.

The repair shop, which is an adjunct to the municipal architect's office, is charged with the upkeep and repair work required for the various buildings of the school system as well as other municipal institutions. A separate report on the repair shop is forwarded herewith.

The development of plans and the construction of buildings for the Reformatory and Workhouse at Lorton, Va., also comes under this office, and the report of the engineer in charge is forwarded herewith.

The following buildings were under construction at the time of the submission of the last annual report and have since been completed:

Addition to Langley Junior High School, located on T Street between First and Second N.E.: By the act of May 10, 1926, \$100,000 was appropriated for the construction of an addition to the Langley Junior High School, including an assembly hall and gymnasium, and the commissioners were authorized to enter into contract or contracts for such addition at a cost not to exceed \$400,000. By the act of March 2, 1927, an additional sum of \$375,000 was appropriated for the completion of the construction. Contract was executed February 4, 1927, with the Charles H. Tompkins Co. for the construction of said addition to and making alterations in said building, including an assembly hall and gymnasium, and including plumbing, electrical, heating, and ventilating systems, in the sum of \$390,975. The work was completed January 14, 1928, at a cost of \$393,594.66. The building is to be heated by a vacuum heating system. Cubic contents, 1,055,000 cubic feet. Cost per cubic foot, 37.3 cents.

Building for birds, located at National Zoological Park: By the act of May 10, 1926, \$49,000 was appropriated for the construction of a public exhibition building for birds, and the commissioners were authorized to enter into contract or contracts for the completion of said building, in accordance with plans and specifications approved by the regents of the Smithsonian Institute, at a cost not to exceed \$102,000. By the act of March 2, 1927, an additional appropriation of \$53,000 was made for the completion of said building. Bids were received March 8, 1927, for the construction of said building, but as the lowest bid exceeded the amount available in the appropriation the bids were rejected. Changes in the plans were made, and new bids were received May 10, 1927. Contract was executed May 27, 1927, with Arthur L. Smith & Co. for the construction of the building, including plumbing, electrical, heating, and ventilating systems in the sum of \$96,790. The contract time expired January 1, 1928, but was extended to May 15, 1928, at which time the work was completed, at a cost of \$97,859.61. Cubic contents, 523,000 cubic feet. Cost per cubic foot, 18.7 cents.

Addition of gymnasium and assembly hall to Petworth School, located on Shepherd Street between Eighth Street and Georgia Avenue N.W.: By the act of May 10, 1926, \$75,000 was appropriated for the construction of said building. Contract was executed July 29, 1927, with Skinker & Garrett for said construction work, including

mechanical equipment, in the sum of \$38,945. The work was completed November 10, 1927, at a cost of \$39,005.52. A steam heating system was installed. Cubic contents, 194,000 cubic feet. Cost per cubic foot, \$0.20 +.

Addition of gymnasium and assembly hall to the West School, located on Farragut Street between Thirteenth and Fourteenth Streets NW.: By the act of May 10, 1926, \$75,000 was appropriated for the construction of a combined gymnasium and assembly hall at the West School, in accordance with the original plans for the construction of said building. Contract was executed July 26, 1927, with the H. S. Hatton Construction Corporation for said construction work, including mechanical equipment, in the sum of \$37,280. The work was completed January 1, 1928, at a cost of \$37,280. A steam heating system was installed. Cubic contents, 193,500 cubic feet. Cost per cubic foot, 19.2 cents.

Addition to Smothers School Building, located between Forty-fourth, Forty-fifth, Clay, and Brook Streets NE.: By the act of May 10, 1926, \$85,000 was appropriated for the construction of a four-room addition to the Smothers School, including the necessary remodeling of the existing building. Contract was executed June 28, 1927, with Skinker & Garrett for said construction work, including mechanical equipment, in the sum of \$41,340. The work was completed December 31, 1927, at a cost of \$41,819.50. A steam heating system was installed. Cubic contents, 169,000 cubic feet. Cost per cubic foot, 24.7 cents.

The following buildings were under construction at the time of the submission of the last annual report, but have not yet been completed:

McKinley Technical High School, located on Second Street between R and T Streets NE.: By the deficiency act of June 7, 1924, \$5,000 was appropriated for the preparation of plans and specifications for a new school building for the McKinley Manual Training School. By the act of March 4, 1925, \$1,000,000 was appropriated for beginning the construction of new buildings for the McKinley Technical High School, and the commissioners were authorized to enter into contract or contracts for such buildings at a cost, exclusive of the treatment of the grounds, not to exceed \$2,250,000. By the act of March 2, 1927, an additional sum of \$1,000,000 was appropriated for continuing the construction of said buildings. Contract was executed June 2, 1926, with Parsons & Hyman, for the construction of three units, namely, main building, including auditorium, etc., gymnasium and power house, including plumbing, heating, and ventilating, and electrical work, to be known as the McKinley Technical High School, in the sum of \$1,974,644. Contract was entered into March 1, 1927, with the W. G. Cornell Co., in the sum of \$17,034, for furnishing and installing a vacuum cleaning system, work on which was to be completed before the date of completion of the building. Contract was entered into April 21, 1927, with the General Electric Co., in the sum of \$3,906, for furnishing six transformers and equipment. This work has been completed. Contract was entered into June 26, 1928, with Peter Clark (Inc.), in the sum of \$8,650, for furnishing and installing stage rigging. This work has been completed. Contract was entered into June 29, 1928, with O. R. Evans & Bro. (Inc.), in the sum of \$12,635, for furnishing and installing electric-light fixtures.

This work has been completed. The contract time expired June 1, 1928, but has been extended to September 14, 1928, for the completion of extra orders. The work to date has cost \$2,018,811.62. Cubic contents, 5,790,000 cubic feet. Cost per cubic foot, 34.8 cents.

Gallinger Municipal Hospital, located in Reservation No. 13, east of Nineteenth and south of B Street SE.: By the act of May 10, 1926, \$300,000 was appropriated for continuing the construction of the domestic building and commencing the construction of an additional ward building of not less than 250 beds, including mechanical and other equipment, furniture and furnishings, at a total cost not to exceed \$1,000,000, which should include any unexpended balances remaining of appropriations theretofore made for buildings at said hospital and the amount by said act appropriated. The act further provided that of said authorized total cost not less than \$75,000 should be available only for the furniture, furnishings, and equipment of said ward building. The balance remaining from former appropriations for buildings at said hospital was, on July 1, 1926, \$180,473.22. By the act of May 21, 1928, \$465,000 was appropriated for completing the construction of the domestic service and ward buildings, subject to the limitations prescribed by the act of May 10, 1926, and for the purchase and installation of new boiler and accessories, and for sewer and water connections, roads, walks and improvements of grounds. Contract was executed June 3, 1927, with George E. Wyne, for continuing the construction of the domestic or service building and the construction of ward building No. 4, including mechanical equipment, in the sum of \$734,800. The contract time will expire May 1, 1929. The cost of the work to date is \$741,222.04. The vacuum system of heating will be installed in these buildings. Cubic contents, 1,345,700 cubic feet. Cost per cubic foot, \$0.55+.

Building construction started subsequent to July 1, 1927.

Water tower No. 2, located at Reno Reservoir, District of Columbia: By the act of March 2, 1927, \$60,000 was appropriated for the construction of an additional water tower of 16,000 gallons capacity at the Reno Reservoir. Contract was executed October 7, 1927, with John B. Ginechesi (Inc.), for the construction of said tower, in the sum of \$57,600. The work was completed June 24, 1928, at a cost of \$58,076.92. Cubic contents, 128,476.58 cubic feet. Cost per cubic foot, 45.2 cents.

Gordon Junior High School, located between Thirty-fourth and Thirty-fifth Streets, south of U Streets NW.: By the act of May 10, 1926, \$200,000 was appropriated for the erection of a junior high school building on the site purchased for that purpose in Georgetown, according to the plans of the Macfarland Junior High School, modified as the limits of the site might require, and the commissioners were authorized to enter into contract or contracts for such building at a cost not to exceed \$475,000. By the act of March 2, 1927, an additional sum of \$275,000 was appropriated for the construction of said building. Contract was executed November 25, 1927, with George E. Wyne, for the construction of said building, including mechanical equipment, in the sum of \$459,900. The contract time will expire September 20, 1928. The cost of the work to date is \$458,852.30. A vacuum heating system will be installed. Cubic contents, 1,694,908 cubic feet. Cost per cubic foot, \$0.27+.

Eight-room addition to the Barnard School, including gymnasium and assembly hall, located on Decatur Street, between Fourth and Fifth Streets NW.: By the act of March 2, 1927, \$175,000 was appropriated for the construction of this addition. Contract was executed December 31, 1927, with John B. Ginechesi (Inc.), in the sum of \$108,133, for this construction work, including mechanical equipment. The contract time will expire September 6, 1928. The work to date has cost \$108,183. The vacuum heating system will be installed. Cubic contents, 366,791 cubic feet. Cost per cubic foot, \$0.29+.

Field House for Virginia Avenue Playgrounds, located between Virginia and Potomac Avenues, Ninth and Eleventh Streets SE., Reservation No. 126: Contract was executed February 14, 1928, with H. S. Hatton Construction Corporation, in the sum of \$3,000, for the construction, including plumbing work, of said house. The work was completed May 10, 1928, at the contract price.

Plumbing, repair, etc., at the Curtis School, located on O Street near Thirty-third Street NW., and the Addison School, located on O Street between Thirteenth and Fourteenth Streets NW.: Contract was entered into February 14, 1928, with H. S. Hatton Construction Corporation, in the sum of \$13,575, for installing toilets and making alterations in the Curtis and Addison Schools. The work was completed June 27, 1928, at a cost of \$13,574.

Construction of drill tower, adjacent to Engine House No. 8, located on North Carolina Avenue and Seventh Street SE.: By the act of March 2, 1927, \$20,000 was appropriated for the erection of one drill tower and equipment, to be located on land owned by the District adjacent to said engine house. Contract was executed January 27, 1928, with Skinker & Garrett, in the sum of \$11,446, for the construction of said drill tower, including mechanical equipment. The work was completed May 21, 1928, at a cost of \$11,644.38.

Garnet-Patterson Junior High School, located between U, V, and Tenth Streets and Vermont Avenue NW.: By the act of May 10, 1926, \$200,000 was appropriated for the erection of an extensible junior high school building to replace the present Garnet-Patterson School Building, in accordance with the plans of the Macfarland Junior High School, modified as the limits of the site may require, and including the removal of one or both of the present buildings as may be necessary, and the commissioners were authorized to enter into contract or contracts for the construction of said building; price not to exceed \$475,000. By the act of May 2, 1928, an additional sum of \$275,000 was appropriated for the completion of this building. Contract was executed October 7, 1927, with the Charles H. Tompkins Co., in the sum of \$372,140, for the construction of said building, including mechanical equipment, plumbing, electrical, heating and ventilating work, with the exception of the construction of the gymnasium wing, as called for in the original drawings and specifications. This omission was made with the understanding that the gymnasium wing, etc., should be constructed for the sum of \$158,720, in the event the Commissioners of the District of Columbia secured by congressional appropriation the funds necessary for said construction. The deficiency act of December 22, 1927, provided that \$80,000 of the unobligated balances of various appropriations for the fiscal year 1927 should be made applicable for the construction work on this building. An order of the commissioners was issued January 10, 1928, for the

construction of the work omitted, as aforesaid, for the sum of \$158,720. Contract time will expire January 15, 1929. The cost of the work to date is \$535,655.40. The vacuum-heating system will be installed. Cubic contents, 1,724,310 cubic feet. Cost per cubic foot, \$0.31+.

Potomac Heights School, located on Hurst Terrace and Dana Place NW.: By the act of March 2, 1927, \$85,000 was appropriated for the erection of a four-room extensible building in Potomac Heights. By the second deficiency act of May 29, 1928, an additional amount of \$24,000 was appropriated for the erection of this building. Contract was executed March 9, 1928, with Skinker & Garrett, for the construction of said building, in the sum of \$76,825. The work to date has cost \$91,439.25. The contract time will expire September 5, 1928. The gravity heating system will be installed. Cubic contents, 253,025 cubic feet. Cost per cubic foot, \$0.36+.

Construction of inclosures for existing porches and alterations at Tuberculosis Hospital, located on Thirteenth, Fourteenth, Upshur and Varnum Streets NW.: Contract was executed March 14, 1928, with the English Construction Co. (Inc.), for the construction of inclosures for existing porches and for alterations at the Tuberculosis Hospital, in the sum of \$9,427. This work has been completed within the contract price.

Alterations at Franklin School, located on Thirteenth and K Streets NW.: Due to the widening of Thirteenth Street along the side of the Franklin School Building, it became necessary to provide a new entrance on the Thirteenth Street side of said building, and to make alterations to the coal vault. Contract was entered into April 17, 1928, with Pringle & Arnold, in the sum of \$6,800, for the execution of this work. This work was completed August 9, 1928, at the contract price.

Margaret Murray Washington School, located on O Street, between North Capitol and First Streets NW.: By the act of March 2, 1927, \$150,000 was appropriated for the construction of an eight-room addition to the Margaret Murray Washington Vocational School, including the necessary remodeling to present building. Contract was executed May 1, 1928, with the C. A. Hofferberth Construction Co., in the sum of \$105,533, for the construction of this addition. The contract time will expire November 17, 1928. The cost to date is \$105,679.59. The vacuum heating system will be installed. Cubic contents, 608,721 cubic feet. Cost per cubic foot, \$0.173.

District Training School, Laurel, Md.: By the act of March 2, 1927, \$150,000 was appropriated for the construction of two additional dormitory buildings. Contract was executed June 19, 1928, with Bahen & Wright, for the construction of these dormitories, for the sum of \$137,750. The contract time for this work will expire April 15, 1929.

By the act of March 2, 1927, \$9,000 was appropriated for the construction of a cow barn, hayloft, and equipment. Contract for this work was executed June 19, 1928, with Bahen & Wright, in the sum of \$11,500. The contract time will expire April 15, 1929.

By the act of March 2, 1927, \$5,000 was appropriated for the construction of an implement and tool house. Contract for this work was executed June 19, 1928, with Bahen & Wright, in the sum of \$6,050. The contract time will expire April 15, 1929.

It will be noted that the contract prices for the construction of the cow barn, hayloft, etc., and for the implement and tool house exceeded the amounts of the appropriations for these projects. The inadequacy of the appropriations to cover the prices for this work, for which bids were received April 24, 1928, was remedied by the second deficiency act of May 29, 1928, which provided that not to exceed \$3,600 of the appropriation for the erection of the two additional dormitories, contained in the District of Columbia appropriation act for the fiscal year 1928, should be made available as an additional amount for the erection of a cow barn and hayloft, including equipment, and the construction of an implement and tool house, for which appropriations were made in said act.

Besides the preparation of plans and specifications for the above-mentioned buildings, plans and specifications for about 50 other pieces of work, such as alterations and repairs to buildings, heating, plumbing, and electrical work for the various buildings have been prepared in this office, the contract prices therefor amounting to \$214,975.

The contracts entered into by this office during the fiscal year beginning July 1, 1927, and ending June 30, 1928, amounted to \$1,588,700.43.

Some progress has been made during the present school year in the development of school grounds. At the Health School, Thirteenth and Allison Streets NW., the grounds have been graded and a garden installed on the south end of the property. The planting of a very simple garden with stone walks, a sun dial, and stone benches was completed during the early spring. Plants were bought of such size that practically all of them bloomed during the spring and summer months, so that the children had the benefit of the improvements during the latter part of the school year.

Congress has appropriated the sum of \$100,000 for the improvement of the following list of schools:

Woodridge School, Stuart Junior High School, Hine Junior High School, Bruce School, John Burroughs School, Randall Junior High School, new Bell School, Brightwood School, Truesdell School, Whittier School, Armstrong High School, Macfarland Junior High School, J. F. Cook School, Janney School, Bancroft School, Raymond School, Western High School, Lovejoy School, Thompson School, new Mott School, and Reservoir School.

Considerable progress has been made on the designs and the work on some of the grounds has already been started.

As the care of these gardens entails additional work on the part of the janitors, it is important that the service be augmented during the spring and summer months when lawns and plants require so much attention. It is to be hoped, therefore, that the Board of Education will see that proper care is given to the plants installed and that replacements are made when necessary.

A new type of school building was developed during the fiscal year, consisting of two 2-story buildings connected by a corridor on the cross axis of which is placed an auditorium and gymnasium. This new type is in answer to the demand for graded school buildings with only one flight of stairs, as these buildings now house only children of the lower grades. The building will provide for 16 classrooms with proper facilities for manual training, domestic science, and domestic art departments. Accommodations for principal and teachers

with proper toilet rooms and kitchenette facilities are provided. Toilet accommodations are made available on each floor. The plan of the school permits of an unusual garden setting, which it is hoped will give the new buildings more beautiful surroundings. The first of the new type buildings to be planned is for the Langdon School which we hope to have under contract during the fiscal year.

ALBERT L. HARRIS,
Municipal Architect.

To the ASSISTANT ENGINEER COMMISSIONER.

REPORT OF CONSTRUCTING ENGINEER, DISTRICT OF COLUMBIA,
WORKHOUSE AND REFORMATORY

LORTON, VA.,
August 17, 1928.

SIR: I have the honor to submit herewith my annual report of the construction and engineering operations at the workhouse and reformatory for fiscal year ending June 30, 1928.

The principal work done at the reformatory during the past fiscal year consisted of continuing the construction of permanent buildings, establishing and putting in operation three new industries, and completing final connection of industrial railroad and putting same in service.

Under construction of permanent buildings the following work was done: Boiler house remodeled and four heating boilers installed; four dormitories on south side, interior work, including doors, window sash, heating radiators, etc., installed; mess hall interior equipment installed, including cooking and bakery equipment, cold storage, and ice plant; additional heating radiators and plumbing fixtures installed in shop buildings; three dormitories, north side, No. 7, 8, and 9, main structure, practically completed from foundation, and one dormitory, No. 6, brickwork 85 per cent complete from foundation; two dormitories, north side, Nos. 4 and 5, foundations placed and 60 per cent brickwork completed; drainage system installed to carry off storm water from central court; rough grading work was practically completed over entire building site.

On industrial railroad the following work was done: Final connection was made from industrial railroad to tracks of Richmond, Fredericksburg & Potomac Railroad in the vicinity of Pohick and the first cars brought in from main line during January, 1928; a 26-ton American locomotive was secured from surplus Army supplies which rendered good service when the large locomotive was laid up for repairs.

On industries the following work was done: A foundry building was constructed from foundation, equipment installed and put in operation during January, 1928; installation of equipment was completed on the canning factory, which was put in operation in August, 1928; machinery installation was completed in the automobile license shop, and operations commenced near the end of July, 1927. The work in connection with the establishing of industries and the equipping of the large mess hall constituted the greater portion of the work of the year; therefore it was not possible to proceed further with completing the other buildings in the main group at the reformatory.

The status of the buildings is as follows: 16 buildings practically complete, some requiring minor interior finishings; 6 buildings under construction, totaling 22 buildings under construction or complete at the reformatory, main group.

The principal work done during the fiscal year at the workhouse consisted of one dormitory interior painted, etc., and occupied about August, 1927; one dormitory, north side, foundation placed and 90 per cent of brickwork completed; one dormitory, north side, foundation completed in part; one dormitory, south side, under construction at beginning of year, main structure practically complete, except roof over front section; one isolation building under construction at beginning of year was completed except for cell fronts, floor and interior equipment; one brick guard cottage was constructed; two additional heating boilers have been installed at the workhouse boiler house.

The status of buildings is as follows: Seven permanent buildings complete or under construction in main group, three of which are occupied.

During the year 4,813,140 bricks were manufactured at the brick plant. Work on improving brick plant was started.

Some studies and estimates were made for improving the water system, power plant, transportation facilities, and for enlarging the brick plant.

A new sand dredge was constructed and equipped with a new dredge pump.

In order to get better results on construction and other engineering work some means should be provided to effect a better system of procurement and transportation of material, and a more centralized control of operations.

Respectfully submitted.

H. R. HAAR,
Constructing Engineer.

To the MUNICIPAL ARCHITECT.

REPORT OF THE SUPERINTENDENT OF REPAIRS

AUGUST 8, 1928.

SIR: I have the honor to submit herewith my annual report showing the operations of this shop during the fiscal year ending June 30, 1928.

There was appropriated by the act of March 2, 1927, for repairs and improvements to school buildings and grounds, repairing and renewing heating, plumbing, and ventilating apparatus, installation and repair of electric lighting equipment, and installation of sanitary drinking fountains in buildings not supplied with same, and maintenance of motor trucks, \$550,000. We expended during the year all of this amount with the exception of \$902.54, which we reserved to pay any outstanding bills which may come in on account of excess delivery of materials.

The following comprise several extraordinary items paid for out of the school appropriation which were done by contract: Heating plants in eight schools, namely, Lenox, Smallwood, Taylor, Logan, Van Buren, Hine Junior, Bruce, and Randall Junior High School,

amounting to \$101,109. Painting and repairing wire cables at smokestack, M Street heating plant, amounting to \$160. Repairs to temperature control at Wilson Normal School, amounting to \$255. Repairs to electric motor at Central High School, amounting to \$391. Retubing boilers at the Burroughs, Congress Heights, and Birney Schools, amounting to \$454. Approaches to Stuart Junior High School, amounting to \$1,881. Toilet facilities at the Curtis and Addison Schools, amounting to \$13,575. Toilet facilities at the Miner Normal School, amounting to \$4,320. Approaches to the Franklin School, amounting to \$6,800. Repair stone balustrade at Central High School, amounting to \$210. Repair heating plant on M Street, amounting to \$300. Slag roof at Randle Highlands School, amounting to \$1,400.

The installation of modern lighting systems has been completed with the exception of the Chain Bridge and Syphax Schools.

The act of March 2, 1927, appropriated for repairs and improvements to engine houses and grounds, \$25,000. All of this amount was expended except 86 cents. Out of the appropriation for the fire department there was a special item of dredging at the fire boat, \$278.16, and a new roof on No. 18 engine house, \$1,233.

The act of March 2, 1927, appropriated for repairs to stations and grounds, \$9,000. All of this amount was expended except \$1.70. Out of the appropriation for the police department, there was a special item of repairs to boiler at No. 6 station house, \$521.76.

The act of March 2, 1927, appropriated for repairs and alterations to police court building, \$2,500. All of this amount was expended except \$233.17.

The foregoing amounts represent the actual cost of 6,513 separate jobs. In addition to the work covered by the above appropriations, which are under the supervision of the superintendent of repairs, this shop did \$66,208.67 worth of work for various appropriations controlled by other departments.

We inspected and repaired steam boilers in over 100 buildings owned by the District.

The shop is comprised of eight annual employees, superintendent, overseer, assistant superintendent, four clerks, and one watchman, and from 200 to 300 per diem employees of the various trades.

Respectfully submitted.

HENRY STOREY,
Superintendent of Repairs.

To the MUNICIPAL ARCHITECT.

REPORT OF THE SUPERINTENDENT, MUNICIPAL GARAGE

AUGUST 21, 1928.

SIR: I have the honor to submit the following report on the municipal garage for the fiscal year ended June 30, 1928.

Fifty-three automobiles were maintained and kept in running order for the various departments of the District government as follows:

Executive office.....	3
Building inspectors office.....	2
Plumbing inspector.....	1

Assessors office.....	5
Corporation counsel.....	1
Central garage.....	8
Municipal architect.....	2
Surveyors office.....	5
Highways department.....	2
City refuse division.....	3
Playground department.....	1
Electrical department.....	7
Community center.....	1
Health department.....	2
Division of child welfare.....	3
Director of traffic.....	2
Weights and measures.....	5

This garage was built in 1917 and was designed to house 25 automobiles with sufficient floor space for the workmen to wash, oil, grease, and repair cars without loss of time required for the shifting of cars to more accessible working space as is now the case.

Each year additional automobiles have been added to the garage until at the present time we have 53 machines that we are maintaining. Thirty-seven of these remain in the garage at night and sixteen are cared for at night by the men to whom they are assigned. It would be impossible to house all of them in the garage at one time.

The garage was kept open at all times, night and day, for urgent and necessary transportation.

The duties of our labor and mechanical force were repairing automobiles, carrying mail from the city post office to the District Building, driving for departments without automobiles or drivers, greasing, oiling, gasing, taking speedometer readings, washing cars at night and also acting as watchmen. In connection with this garage we have an automobile repair shop located at second and Bryant Streets where all repair work is done for the water department, sewer department, District of Columbia repair shop, Board of Public Welfare, police department, and others.

Operating cost for the maintenance of 53 automobiles, including labor, gasoline, oil, tires, miscellaneous supplies, and drivers, amounted to \$21,695.12 or an average of \$409.34 for each car, or \$0.04095 per mile, a saving over last year of \$14.73 on each car, or of \$0.0093 per mile.

The cost of repair parts used in the cars was \$3,551.04, or an average of \$67 for each car, or \$0.0126 per mile, a saving over last year of \$2.06 per car, or \$0.0006 per mile. Mileage of the 53 automobiles totaled 340,779 miles, or 6,429 per car, an increase over last year of 206 miles per car.

This office last fiscal year purchased for various departments of the District government 31 automobiles, including exchanges of old worn-out motor vehicles.

C. N. EMMONS,
Superintendent Municipal Garage.

To the ASSISTANT SUPERINTENDENT DISTRICT BUILDING.

REPORT OF THE ASSISTANT SUPERINTENDENT OF THE DISTRICT BUILDING

AUGUST 10, 1928.

SIR: I have the honor to submit the following report on the maintenance, care, and operation of the District Building, including the operation of the various activities connected with this department, for the fiscal year ended June 30, 1928.

During the past year no change was made in the assignment of rooms in the District Building. This was not because of lack of requests for additional space, but due to the overcrowded condition of every department. It was impossible to find space whenever a request was made. A recent survey of the space occupied by some of the most crowded departments showed that there was as little as 61 square feet of floor space per person in one department, whereas this same department, in 1922, had 114 square feet; another office with 75 square feet to-day, had 113 in 1922.

POWER PLANT

The personnel of this department performed all of the necessary repair work, in the power plant, to the mechanical equipment, and to the plumbing throughout the building. This effected a large saving to the appropriation as the cost of this work done by outside labor is very expensive.

There was expended for major repair parts, in the engine room, \$446. In addition to this, a new air compressor for the pneumatic tube system was installed.

There were consumed for the entire year, 2,337 tons of coal at an average cost of \$5.805 per ton, or a total cost of \$13,572.22. This is the largest consumption of coal, in any one year, since the building was opened and this increase is attributed entirely to the demand for more light through the building. Many rooms that were lighted with 50-watt carbon lamps in 1908 have 200-watt Mazda lamps in the same place to-day.

During the fiscal year 1928, there were generated 730,650 kilowatt-hours of which 546,655 were used for lighting and 183,995 for power. This is an increase of 196,810 kilowatt-hours over the past year.

ELECTRICAL DEPARTMENT

This department has charge of six passenger elevators and one freight elevator, the electrical equipment, and all lights throughout the building. In addition to this the electricians assist other departments in the care of their adding machines, electric fans, etc.

There were replaced as worn-out parts in connection with the elevator system, 24 main-contact springs, 36 connecting strips, 12 brake contacts, 48 special main contacts, 24 double plates, 36 single plates, and 4 sets of cork-lined brake shoes.

It was necessary during the year to renew car-hoist cables on one elevator and to repair four armatures. The signal system was repaired a great many times. Lighting fixtures were changed in a number of the rooms to a different type of fixture with a larger candle-power lamp.

WOODWORK AND PAINT SHOP

This department made all necessary repairs to the building such as repairs to doors, locks, windows and blinds; plastering and painting walls, varnishing floors, etc. In addition, numerous pieces of furniture were made, overhauled, and repaired by the carpenters for the various departments.

The sum of \$2,821.12 was expended for labor and material for painting.

Some of the principal items of work done by the painters during the year were complete renovation of the board room, the painting of two of the corridors throughout, and refinishing of the woodwork at the Fourteenth Street entrance to the building.

The cost of wall and ceiling painting combined averaged about 11 cents per coat per square yard.

BLUE PRINT AND PHOTOGRAPH SHOP

The total receipts for blue printing and photography for the fiscal year ended June 30, 1928, amounted to \$4,515.30.

LAYSON E. ATKINS,

Major, Corps of Engineers, United States Army, Superintendent.

E. P. BROOKE,

Assistant Superintendent in Charge.

To the COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

REPORT OF ENGINEER OF HIGHWAYS

SEPTEMBER 14, 1928.

SIR: There is forwarded herewith the annual report of the engineer of highways for the fiscal year ended June 30, 1928.

During the year changes in organization, operating methods, and engineering policies were made, in part as follows:

Appointment of engineer of maintenance.

Appointment of chief inspector.

Appointment of truck master.

The highway shops, operating primarily for the maintenance division, have been partially reorganized and the personnel materially reduced. A system of field supply under the truck master has been worked out and was in operation for the last six months of the fiscal year.

The savings in the maintenance appropriation, resulting from the changes in shop practice and truck-hiring system, have largely been invested in new plant and equipment. The need for modern repair plant in the department was urgent and its use will make possible a more economical operation and improve the character of work. To insure proper care and upkeep of all field plant and equipment there has been employed a plant repair foreman, who will have charge of and be responsible for its condition.

The appointment of the chief inspector gave the department an opportunity to study and regulate the field control of all construction

work to a much higher degree. The inspection service has improved wonderfully under his leadership during the year. Inspection service has been extended to include all whole-cost street and alley paving work.

The complete review of all specifications for new construction was made during the year and it is believed all have been brought to a high standard and are in accordance generally with the very best engineering practice. The thickness of concrete bases for bituminous pavements and concrete roadways has been increased to meet modern traffic conditions. While the initial cost may be slightly higher the practice will prove economical in years to come.

The department has authority to employ a cost accountant and when this section of the department begins functioning it will be possible to obtain accurate and valuable cost records of the various operations under control of the engineer of highways.

The department plans to undertake a complete survey early in the fiscal year 1929 of all paved streets and roads and of macadam streets. This survey is being made for the purpose of ascertaining the present condition and amount of repairs necessary in connection with the paved streets and to determine the adaptability of the macadam streets and roads to the curb and gutter treatment. It is expected that report of this survey will be completed by December 1.

H. C. WHITEHURST,
Captain, Corps of Engineers,
United States Army, Assistant.

To the ENGINEER COMMISSIONER.

AUGUST 30, 1928.

SIR: I have the honor to submit the following report of the operations of the office of the engineer of highways for the fiscal year ended June 30, 1928:

The total amount of funds appropriated by Congress and deposited by corporations and others for disbursement by the highway division aggregated \$4,479,461.51, of which \$300,000 was for paving sidewalks and alleys in all parts of the District; \$194,100 for paving new roadways; \$900,000 for repairing old roadway pavements, including asphalt resurfacing; \$310,000 for repair of suburban roads; \$77,700 for construction and repair of bridges and viaducts; \$20,000 for construction of bridge over Rock Creek at Military Road; \$250,000 for construction of M Street Bridge over Rock Creek; \$40,000 for reconstruction of Virginia abutment at Chain Bridge; \$50,000 for grading streets and avenues; \$12,000 for sidewalks and curbs around Government reservations, buildings, and parks; \$50,000 for paving roadways under the permit system; \$1,486,500 for paving and repaving roadways under the gasoline tax, road, and street fund, which includes \$450,000 for asphalt pavements over 30 years; while \$789,161.51 was spent in repairing pavements disturbed by other branches of the District government and by various corporations and others.

Summary of work under appropriation for improvement and repairs for year ended
June 30, 1928

Cement gutter.....	square yards..	4, 221
Amiesite pavement.....	do.....	¹ 5, 931
Standard asphalt pavement.....	do.....	190, 495
Standard asphalt surface.....	do.....	206, 911
Asphalt surface pavements (blanket treatment).....	do.....	15, 441
Vitrified block gutter.....	do.....	14, 362
Cement concrete roadway pavements (15½ miles).....	do.....	² 269, 539
Old cobble and block removed.....	do.....	735
Granite and bluestone curb set.....	linear feet..	17, 760
Cement curb formed and laid.....	do.....	123, 495
Grading.....	cubic yards..	195, 148
Cement concrete sidewalks (assessment and permit work).....	square yards..	34, 660. 15
Cement concrete sidewalks (around Government reservations).....	do.....	7, 043. 16
Cement concrete alleys (assessment and permit work).....	do.....	69, 916. 48

The following is the list of tables appended to the report:

Table A. Street railways in the District of Columbia July 1, 1928.

Tables B and C. Statement of character and extent of street pavements.

Table E. Street improvements.

Table F. Repairs to asphalt and coal-tar pavements.

Table G. Work done for street-railway companies.

Table H. Work done by day labor under appropriation for "Repairs to streets, avenues, and alleys.

Table I. Regular permit work.

Table K. Assessment work.

Table L. Replacing and repairing sidewalks and curbs around public reservations.

Table N. Whole-cost work.

Table O. Repairs to cuts by plumbers and others.

Table P. Grading streets, alleys, and roads.

Of the above tables, B, C, and O are printed herewith. The remaining tables are on file in the record room of the office of the engineer of highways, plan case No. B-1335.

The field of activity of the year's work was well balanced. The resurfacing of asphalt streets comprised 123 items, ranging from one to five squares in length, about half of which were performed by the heater method. The average age of the asphalt pavements resurfaced was in excess of 31 years—a remarkable endurance record. The construction of new roadways comprised 84 items ranging from one to seven squares in length. There were three major and one small roadway widening items—Connecticut Avenue from Dupont Circle to Florida Avenue, Fifteenth Street NW., and Thirteenth Street NW. from I Street to Massachusetts Avenue, and Twelfth Street NW. from Pennsylvania Avenue to E Street.

Under our engineering control, but at the whole cost of interested private interests, 17 items of roadway pavement were laid, while under the so-called permit or half-cost deposit system 10 roadways were constructed.

Thirty-nine contract items of grading were executed of varying amounts up to a maximum of about \$22,000.

The public demands for alley paving, and in a modified degree for sidewalk construction, continues to the extent that restrictive rules of selection continue to be applied to such requests in order to limit the work authorized to the funds available.

¹793 square yards amiesite laid under whole cost system.

²16,703 square yards concrete laid under whole cost system.

As compared with past costs, contract prices were as a rule slightly lower and were definitely advantageous to the District.

The increase in number and cost of repairs (\$789,161) to pavements cut for underground installations was very notable—approximating 20 per cent in excess of the previous record year. These costs are largely chargeable to the deposits of corporations and individuals, for whose use the cuts were made; no other municipality, so far as is known, enforcing underground installations of utilities to as great a degree as our own.

A current but unfinished contract provides for the improvement of a total of about 6 miles of completed streets with concrete curbs and gutters and bituminous treatment of the existing roadway between the gutters, a procedure that at relatively moderate cost will adequately provide these thoroughfares with roadways equal to their needs for many years to come without the otherwise necessary removal of the present roadways incident to the construction of a modern pavement.

Bids received during the closing days of the fiscal year for the performance of the asphalt repairs to roadways were, for the first time since 1914, more economical than the costs of such work by the use of the municipal asphalt plant purchased in that year and operated continuously since then. As a result, by provision of law in such case, this work will be placed under contract and the asphalt plant will be held idle, at least during the one-year term of such contract. At the same time the construction of concrete base over cuts made for underground installations, to support the pavements to be replaced, will be placed under contract, instead of being continued as a day-labor activity. Identical action will, at the same time, occur as to repairs to cuts in concrete roadways and alleys.

During the year definite and most valuable reorganization of the office was accomplished, especially in respect to the maintenance agencies. By effective presentation of past deficiencies, the new statutory position of engineer of maintenance was secured and the activities properly attaching thereto were grouped thereunder.

The day-labor forces have been reorganized into a larger number of smaller units with increased supervisory control. Certain of this day-labor activity is, as related, being placed under contract and the remainder will be still further and continuously reorganized as to personnel and mechanical equipment.

BRIDGES

The expenditures from the appropriation for construction and repair of bridges amounted to \$40,021.04. The principal items of work were:

Connecticut Avenue Bridge over Klingle Road, paint.....	\$1, 402. 98
Connecticut Avenue Bridge over Klingle Road, refloor.....	14, 466. 45
Calvert Street Bridge over Rock Creek, new handrail.....	2, 107. 42
Anacostia Bridge, expansion joints.....	1, 961. 88
Anacostia Bridge, paint.....	1, 713. 39

Contract was executed for a new bridge over Rock Creek at Military Road under special appropriation therefor.

Plans and specifications were prepared for a new bridge over Rock Creek at M Street under special appropriation therefor.

Contract was executed for the reconstruction of the roadway floor of the Highway Bridge over the Potomac River under special appropriation therefor.

Under specific appropriation therefor and authorization for day labor, performance of the rebuilding of the Virginia abutment of the Chain Bridge over the Potomac River is in progress.

Repairs to District Wharf No. 6, at a cost of \$2,500, are in progress and plans and specifications for repairs to the District Morgue Wharf, to cost \$6,000, were prepared.

Tables showing in detail all work done and its costs are on file.

My acknowledgments are due to the employees of this department for the work accomplished by the office during the year.

C. B. HUNT, *Engineer of Highways.*

To the ASSISTANT ENGINEER COMMISSIONER.

TABLES B AND C.—*Character and extent of roadway pavements, June 30, 1928*

SQUARE YARDS

Section	Asphalt	Asphaltic surface	Asphalt block	Asphaltic concrete, stone base	Asphaltic concrete, stone base	Amiesite	Cement concrete
City:							
Northwest.....	1,829,586	15,575	17,842	9,674	6,372	5,138	31,436
Northeast.....	454,882	2,884	169,704	3,127	-----	-----	24,861
Southeast.....	338,389	23,825	196,936	8,019	4,082	-----	39,509
Southwest.....	291,550	48,114	40,436	13,535	-----	-----	11,148
Georgetown.....	147,795	6,143	17,545	1,738	905	-----	7,110
Suburban:							
Northwest.....	421,848	103,722	83,206	25,855	24,501	793	781,636
Northeast.....	90,255	21,882	6,925	14,354	-----	-----	232,867
Southeast.....	21,203	43,591	-----	-----	3,049	-----	52,805
Total.....	3,595,508	265,736	532,594	76,302	38,909	5,931	1,181,372

MILEAGE

Section	Asphalt	Asphaltic surface	Asphalt block	Asphaltic concrete, stone base	Asphaltic concrete, stone base	Amiesite	Cement concrete
City:							
Northwest.....	94.07	0.80	1.07	0.51	0.24	0.18	1.69
Northeast.....	23.92	.14	7.31	.19	-----	-----	1.61
Southeast.....	17.70	1.20	10.02	.43	.17	-----	2.05
Southwest.....	15.81	2.53	2.37	.68	-----	-----	.36
Georgetown.....	9.39	.24	1.05	.19	.06	-----	.41
Suburban:							
Northwest.....	23.41	6.92	4.49	1.31	1.48	.05	41.97
Northeast.....	5.64	1.26	.63	.97	-----	-----	12.51
Southeast.....	1.83	3.77	-----	-----	.21	-----	2.48
Total.....	191.77	16.86	26.94	4.28	2.16	.23	63.08

SQUARE YARDS

Section	Durax block (small granite block)	Granite and rubble	Vitrified block	Cobble	Macadam (estimated)	Gutters on asphalt streets	Gutters on asphaltic concrete streets
City:							
Northwest.....	12,294	76,295	9,855	5,763	16,407	120,493	1,128
Northeast.....	-----	17,601	3,882	-----	26,076	36,390	231
Southeast.....	-----	20,449	-----	13,122	35,911	24,066	898
Southwest.....	-----	96,076	3,138	7,070	10,136	24,927	1,254
Georgetown.....	19,385	26,951	515	10,419	3,000	6,351	374
Suburban:							
Northwest.....	-----	-----	-----	-----	1,081,208	31,706	4,517
Northeast.....	-----	-----	-----	-----	295,780	6,591	1,049
Southeast.....	-----	4,102	-----	-----	35,199	6,385	272
Total.....	31,679	241,474	17,390	36,374	1,503,717	256,929	9,723

TABLES B AND C.—Character and extent of roadway pavements, June 30, 1928—Continued

MILEAGE

Section	Durax block (small granite block)	Granite and rubble	Vitrified block	Cobble	Macadam (estimated)	Gravel and unimproved (estimated)	Total
City:							
Northwest.....	0.30	4.56	0.50	0.08	0.66	2.16	106.82
Northeast.....		.87	.24		1.35	2.44	38.07
Southeast.....		1.21		.66	1.60	4.07	39.11
Southwest.....		4.92	.27	.30	.49	2.62	30.35
Georgetown.....	.83	1.99	.03	.48	.06	.35	15.08
Suburban:							
Northwest.....					71.36	71.35	222.34
Northeast.....					24.70	56.67	102.38
Southeast.....		.21			2.73	40.17	51.40
Total.....	1.13	13.76	1.04	1.52	102.95	179.83	605.55

SQUARE YARDS

Section	Pavements maintained by street railways	Total	Section	Pavements maintained by street railways	Total
City:			Suburban:		
Northwest.....	287,110	2,444,968	Northwest.....	79,771	2,638,763
Northeast.....	69,316	808,954	Northeast.....	25,356	695,059
Southeast.....	48,328	753,554	Southwest.....	14,781	181,387
Southwest.....	56,820	604,204	Total.....	616,807	8,410,445
Georgetown.....	35,325	283,556			

TABLE O.—Cost of repairs to cuts in various streets, sidewalks, and alleys during the year ending June 30, 1928, chargeable to plumbers, public service corporations, individual depositors, and appropriations of the District and Federal Governments

Depositors	Cost of repairs		
	Flat rate	Whole cost	Total
Plumbers.....	\$22,971.32		\$22,971.32
Public service corporations.....	85,851.14	\$293,026.63	378,877.77
Individual depositors.....	33,881.04		33,881.04
Various appropriations of the District and Federal Governments.....	94,930.83	258,500.55	353,431.38
Total.....	237,634.33	551,527.18	789,161.51

Character of pavement repaired	Flat rate	Whole cost	Character of pavement repaired	Flat rate	Whole cost
	Sq. yds.	Sq. yds.		Sq. yds.	Sq. yds.
Sheet asphalt.....	7,040.99	20,841.66	Concrete roadways.....	3,429.59	17,011.01
Vitrified block.....	1,162.00	5,212.16	Scoria.....	31.29	33.06
Asphalt block.....	1,272.46	14,739.57	Durax.....	58.43	3,472.40
Granite block.....	558.49	2,571.19	Brick sidewalks.....	8,372.65	29,396.87
Cobble.....	231.24	402.41	Total.....	67,650.43	135,000.45
Cement sidewalks.....	42,925.24	40,945.62			
Macadam.....	2,568.05	374.50			

REPORT OF THE SURVEYOR

AUGUST 28, 1928.

SIR: Herewith is submitted annual report covering the activities of the office of the surveyor of the District of Columbia for the fiscal year ended June 30, 1928.

The two branches of this office are: Main office (in charge of surveys, subdivisions, records, etc.) and street extension division (street extensions and changes in the highway plan).

The work of the surveyor's office is listed under three classes: 1. Work performed for private parties for which fees are charged, as prescribed by order of the commissioners. 2. Work for the various departments of the District and Federal Governments for which no fees are charged. 3. Work done in connection with condemnation cases for streets, alleys, parks, school and playground sites, etc.

The following statement will show in detail the work performed under these three classes:

1. WORK FOR PRIVATE PARTIES

SURVEY WORK

Number of surveys made, 1,707.

Number of individual lots staked on orders for surveys, 2,907.

Certificates (or plats) of survey issued, 1,707.

Surveys to locate foundations of buildings in course of erection, 1,402.

Number of buildings located with relation to property lines, 619.

Large tracks surveyed, subdivided, and recorded, 7.

Surveys made of unsubdivided tracts, 100.

SUBDIVISIONS

Subdivision plats prepared (in duplicate), 306.

Subdivisions recorded, 246.

Total number of lots in subdivisions recorded, 1,553.

PLATS ISSUED IN CONNECTION WITH PERMITS

Plats made to accompany applications for building permits (commonly called "building plats"), 4,058.

Plats made under regulations covering zoning law, for the erection of garages, motors, etc., 587.

MISCELLANEOUS PLATS

Plats of all kinds made on orders of private parties, 6,765.

Highway maps of the District of Columbia sold, 306.

ESTIMATES ISSUED AND FEES COLLECTED

Estimates of cost (issued in triplicate), 8,748.

Total of fees paid to collector of taxes for work done by surveyor's office, \$35,575.35.

2. WORK FOR THE DISTRICT OF COLUMBIA AND FEDERAL GOVERNMENT

Number of surveys made, 138.

Plats recorded (condemnations, dedications, etc.), 62.

Plats showing readjustment of alleys (opening and closing alleys), 22.

Plats recorded showing changes in the highway plan, 20.

Reports to building inspector concerning foundation walls in course of erection, 1,402.

Assessment and taxation plats recorded, 344.

3. CONDEMNATION CASES

Cases pending in court, 55.

Cases confirmed by court, 17.

Cases ordered by commissioners, but not yet filed, 5.

Total amount awarded as damages in condemnation cases, \$333,184.42.

Total amount assessed as benefits in condemnation cases, \$36,242.05.

SUMMARY OF WORK FOR THE DISTRICT OF COLUMBIA

Total number of surveys made for the District of Columbia and private parties, 3,354.

Total of plats, public and private, including plats drawn in books, 7,404.

A table showing a comparison of the work performed by this office during the past fiscal year and the year previous is on file in this office.

SURVEY WORK

While the survey work performed by this office during the past year upon orders for private parties has not been quite so heavy as during the year previous, the amount of work for the District of Columbia has been double that of the previous year. The number of large tracts surveyed, subdivided, and recorded has been practically the same as the previous year.

Quite a large amount of work has been performed for the District in connection with tracts acquired for additions to school sites, and the office has been called upon to make surveys, computations, and plats in connection with the acquisition and development of the sites for new Government buildings in the triangle south of Pennsylvania Avenue.

Other classes of survey work which this office has been called upon to do is work necessary to determine the location of improvements in connection with condemnation cases for streets and alleys and in connection with proposed changes in the highway plan. It is necessary whenever property is to be condemned or the highway plan adjusted, for this office to ascertain the location of buildings and other improvements along the line of the proposed street or alley, so that the matter may be placed before the court in a condemnation case, or before the commissioners at the hearing in connection with a proposed change in the highway plan.

As the population of the District is rapidly spreading and extending out through the territory beyond the city limits, and the necessity for street extensions becoming more urgent, this class of work is naturally increasing from year to year.

SUBDIVISIONS

There has been a moderate amount of subdivision work in the District of Columbia during the past year. The decrease in building operations has, of course, affected the subdivision activity, and while there has been a decrease in the number of resubdivisions of existing lots, the large tracts coming in for subdivision have been practically the same in number as the previous fiscal year.

The question of subdivisions of land requires more careful study than in former times on account of new conditions continually arising during the present generation, especially those brought about by the traffic problem. Greater care must be exercised in street planning, and the general layout of property offered for subdivision and future development. Streets must be planned with a view to a greater degree of safety; wider alleys must be provided, with adequate cut-offs at corners; lots must be so planned as to accommodate improvements conforming in all respects to the zoning regulations, and sufficient space must be provided in alleys for turn-arounds where it is impracticable to extend the alleys through from one street to another. These and many similar questions are continually arising, which makes it highly important that all plans for new subdivisions must be given most careful consideration.

Many cases have arisen recently where the owners of tracts of land have endeavored to place subdivisions on the record books not in conformity to the existing plan of the permanent system of highways for the District of Columbia, but have in such cases made an effort to have the highway plan changed to conform to certain lines of development which they have considered to be more artistic and attractive. But such subdivision plans are not always the wisest from the standpoint of traffic safety, drainage conditions, etc. So care must be exercised by the District authorities to determine whether or not the plans submitted for proposed development are satisfactory, not only to the owners themselves, but are also to the best interests of the general public and the surrounding territory, which must sooner or later be vitally affected by the layout which is finally adopted.

There seems to be some tendency on the part of property owners to make their plans on lines other than those laid down on the plan of the permanent system of highways, which is practically an extension of the plan of the original Federal city of Washington. It is highly important that radical changes should not be made. The plan of the original Federal city, it is believed, should be adhered to for the outlying territory in the District of Columbia as far as practicable, and curved and irregular street planning generally should be disapproved. Of course there are matters which sometimes arise, such as questions of topography, drainage, etc., which make it advisable to approve minor changes in the highway plan, but such changes should be well considered from every angle before they are permitted to be made.

PARKS

During the past year there was an appropriation of \$5,000 available for small parks, but this small appropriation was made to provide also for the expenditure of money for the purchase or condemnation of streets, roads, and alleys.

This appropriation is entirely inadequate for the purpose for which it is intended. It is impossible to make more than one or two small park acquisitions with this amount, and the property acquired must necessarily be the cheapest that can be bought, and situated in the remotest sections where the need will not be felt for the park space for years to come. In the sections of the District where these small parks are sorely needed, it is impossible to consider their purchase on account of lack of funds to acquire them.

There are a great number of small triangles at street intersections which should be acquired before small and unsightly structures are placed on them which are a menace and eyesore to the surrounding property. There is no method of enforcing owners when subdividing their property to dedicate land for parks. The creation of parks and recreation centers are certainly great assets to a well-planned and up-to-date subdivision, and greatly enhance the lots in the subdivision. However, the property owners can not always be made to see these advantages, and too frequently sell all the land comprised in the subdivision, including property which is splendidly adapted for park purposes.

It is therefore believed a large appropriation should be provided for the purpose of acquiring park sites at street intersections. As fast as subdivisions are made and the general layout of streets in a particular locality is determined, the question of suitable park property in the subdivision should be considered, and the means for effecting purchases of such park sites should be provided so they may be acquired before structures are erected which would prohibit their acquisition for the purpose desired.

During the past year an attempt was made to condemn under this appropriation a small portion of one square (square 3638) for a small park, but when the award of the jury was brought in it was found to be greater than the appropriation, so the case had to be discontinued, entailing the cost of the court proceeding to no avail. Another case was then filed for a portion of two other squares (squares 3633 and 3635) in order that the appropriation could be used. This latter case is still pending in court, and it remains to be seen whether the appropriation will cover the amount of the award in this case.

HIGHWAY PLAN

The appropriation of \$3,000 for "Revision of the highway plan, including the surveying and permanent marking on the ground of the system of highways," has been used to advantage in this important work.

During the past year a large amount of this class of work has been performed, such as setting stones on the ground to mark street extensions in accordance with the highway plan, and the placing of monuments to mark street corners, including also drafting and computing work in connection with changes in the plan.

The past two years will show a large increase in this work, as will be realized from the fact that the total number of plans showing changes in the highway plan recorded for the past two years was 51, while for the two years previous there were only 9 plans recorded.

Changes in the highway plan are made only after the most careful consideration. The question of a proposed change in the plan usually first comes up for consideration before the coordinating committee of the National Capital Park and Planning Commission, of which the surveyor is a member. Plans are then drawn up showing the proposed change and submitted to the Commissioners of the District of Columbia for their consideration, and if tentatively approved a date is set for a public hearing, and notice of the hearing given by advertisement in the press in accordance with law. After parties interested are heard at the hearing, the plan is finally considered by the commissioners and, if approved, is sent to the National Capital Park and Planning Commission, which commission must also approve it before it can be recorded. If approved by the latter commission, the plans are returned to the Commissioners of the District of Columbia and then forwarded to the surveyor's office with an order for recording.

Thus it will be seen how many safeguards are placed by law against unwise changes in the plan of the permanent system of highways, and this is as it should be. This plan has been in existence for about 35 years, and has become so established that a change would often be unfair to private land. The law provides that the plan as recorded in the office of the surveyor shall be a sufficient description and reference for the owner of the land to refer to it in deed or will which is made at any time subsequent to the recording of the map. Transfers and divisions of estates have been made in accordance with the highway plan, even though the streets have not yet gone into public ownership. Houses have often been constructed so as to conform to the future opening of the streets, and it has been a determining factor in establishing values. The law designates it as a permanent highway plan, and it should not be changed except for very substantial and justifiable reasons. It is believed, however, there are places where it can be changed in the public interests, as for instance, along the ridge east of and somewhat parallel to the Anacostia River, and other similar places in the District, where the terrain is very rugged and the property of such value that heavy grading is not justified.

CONDEMNATIONS

All condemnation cases for streets, alleys, school sites, small parks, etc., which are filed in court by the District, are based on plats, computations, and descriptions furnished by this office.

During the past year there were 55 cases pending in court. Of this number 44 were miscellaneous cases (streets, alleys, school and playground sites, etc.) and the remaining 11 were alley cases. Of this number 20 cases were filed in court during the past year.

The total number of cases confirmed by the court was 17—11 miscellaneous cases and 6 alley cases.

The total amount awarded as damages for all condemnation cases confirmed was \$333,184.42, and the total amount assessed as benefits \$36,242.05. The total amount of damages includes the awards in

condemnation cases for the acquisition of land for school and playground purposes, and also for the third high reservoir, in which cases the law provides for no assessment of benefits. The total amount awarded as damages in the cases where assessments were levied in accordance with law amounted to \$37,455.37.

In addition to the cases in court, five cases have been ordered by the commissioners but not yet filed.

Condemnation cases for streets as laid down on the plan of the permanent system of highways are now filed under a law recently enacted. (Public Act No. 311, approved May 28, 1926.) In all such cases filed prior to the enactment of this law the amount of damages, plus the cost of the court proceedings, had to be entirely covered by the amount found by the jury as benefits. The new act, however, provides that in all condemnation proceedings instituted by the Commissioners of the District of Columbia for the opening, extension, widening, or straightening of any street, avenue, road or highway in accordance with the plan of the permanent system of highways for the District of Columbia, all or any part of the amount found to be due and awarded by the jury in said proceeding as damages for, and in respect of, the land condemned for such streets, avenues, roads or highways, plus all or any part of the costs and expenses of said proceeding may be assessed by the jury as benefits: *Provided, however,* That if the total amount of damages awarded by the jury in any such proceedings, plus the costs and expenses of said proceedings, be in excess of the total amount of benefits, it shall be optional with the Commissioners of the District to abide by the verdict of the jury, or at any time before final ratification and confirmation of the verdict, to enter a voluntary dismissal of the cause. The act also provides for appropriations out of the revenues of the District of Columbia to pay any difference which may be found by the jury between the amount awarded as damages, plus the cost of the proceedings, and the amount assessed as benefits, when the amount assessed as benefits is less than the damages and costs.

The new law, however, does not apply to condemnations of minor streets or alleys, such cases being instituted under the old law requiring the amount of damages and court costs to be not less than the amount assessed as benefits, as heretofore.

The new law has been found to be very beneficial in enabling the District to acquire important street extensions where in many cases heretofore it was impossible on account of the inability of the jury to find assessments for benefits equal to the damages and costs. However, in some cases the amount of damages awarded has been so much greater than the amount of benefits that this office has not felt justified in recommending confirmation and the consequent unwarranted depletion of the revenues of the District. New verdicts hereafter being rendered will be carefully considered, and in case of unreasonable differences requiring the payment of unwarranted sums from the District revenues, will not be recommended by this office for approval.

During the past year some of the largest condemnation cases ever prepared were filed in court. On October 24, 1927, petition was filed for the acquisition by condemnation of Conduit Road between Foxhall Road and United States Government property adjacent to the District line. On February 2, 1928, a case was filed involving the

acquisition by condemnation of Thirteenth, Fourteenth, Nicholson, Peabody, Quackenbos, Sheridan, Tuckerman, and Van Buren Streets, Colorado, Concord, and Luzon Avenues, Fort Drive, and Piney Branch Road through the vast territory lying south of the Walter Reed General Hospital between Georgia Avenue and Fourteenth Street NW. On May 8, 1928, there was filed a case providing for the acquisition of a large territory for addition to the Anacostia Park. On May 24, 1928, petition was filed for the condemnation for the widening of Benning Road between Fifteenth Street and Anacostia Park. In addition to these large and important cases, there have been many cases of less importance filed during the past year.

A table showing all condemnation cases pending in court during the past year, and the status of each to June 30, 1928, is on file in this office.

CLOSING OLD STREETS AND ROADS

It is believed fitting to make some reference to the progress made in closing old streets and roads under the act of Congress approved January 30, 1925.

This law provides for the closing of any street, road, or highway, or any part of a street, road, or highway which may have been rendered useless or unnecessary by reason of the opening, extension, widening, or straightening of streets in accordance with the highway plan, upon the consent of all the property owners abutting on the street, road, or highway proposed to be closed.

This is an advantageous law if applied strictly to the purposes for which it was intended. It frequently happens that in opening streets by subdivision, dedication, or condemnation there will remain in the particular locality where new streets are opened some old irregular street or road which has been in existence long before the highway plan was adopted, and by reason of the actual opening of the new streets in accordance with the highway plan such old streets or road have become manifestly useless and unnecessary. In accordance with this act these old streets and roads may be closed upon the consent of all the abutting property owners, and approval by the commissioners.

The following streets were closed under this law during the past fiscal year: Bell Street, running northwesterly from Grant Street NE. Hoover Road, between Twenty-sixth and Otis Streets NE. Part of Massachusetts Avenue north of Hamilton Circle NW. Varnell Place between Idaho Avenue and Macomb Street NW., adjacent to square 1801.

RECOMMENDATIONS

The following matters are recommended for your consideration:

1. Many changes have been made in the permanent system of highways the last few years. This frequently makes it desirable to close streets previously dedicated in accordance with the then existing highway plan. The law authorizing the commissioners to close old roads, streets, and highways rendered useless and unnecessary by reason of the opening of streets in accordance with the highway plan does not authorize them to close these highway-plan streets previously dedicated, according to an opinion of the corporation counsel. It would, therefore, seem advisable to secure legislation giving the com-

missioners such authority. This authority, however, should be exercised with great care and consideration, for there could easily result great injustice to property owners affected. For that reason it is believed the legislation should include specific streets rather than a general authority. A list of these streets will be submitted if this recommendation is given favorable consideration.

2. This office has had a small appropriation of \$5,000 for the acquisition of small parks, as well as for streets and alleys. Formerly this appropriation was \$25,000, but Congress has seen fit to reduce it from time to time until it has reached the present insignificant amount. This appropriation should be very substantially increased. As previously stated in this report, the part of the District outside of the original L'Enfant plan is not provided with small parks anything like in comparison to those we find within the original L'Enfant plan, calling attention especially to the small parks along Pennsylvania Avenue southeast. These are usually created at street intersections where development by buildings would mar the beauty of the city. The National Capital Park and Planning Commission has an appropriation of \$850,000 for the acquisition of park sites, etc. The commission, however, has adopted the policy of not acquiring small triangular parks, leaving their acquisition in the hands of the commissioners. It is believed by this office that nothing could be done to beautify the city more than the acquisition of these small parks throughout the entire District. One need but to observe the use of the circles and reservations within the city limits to be convinced of their benefits to the children, as well as serving as recreation centers for the residents of the city. If the present policy is continued these beauty spots will be lost, and for that reason it is believed that at least \$50,000 of the \$850,000 referred to should be placed under the control of the commissioners for the acquisition of the areas referred to.

The acquisition of small parks should undoubtedly be under the commissioners, for they are charged with the responsibility of developing the highway plan for the District, and therefore are better informed as to where these parks should be located.

3. In connection with the condemnation of streets and alleys this office is now engaged in survey work preliminary to recommending to the commissioners the acquisition by condemnation of the following major streets as soon as this survey work is completed:

Foxhall Road from Conduit Road to American University.

Potomac Avenue from Foxball Road to the District line.

Sheriff Road from Kenilworth Avenue to the District line.

M. C. HAZEN, *Surveyor*.

To the ASSISTANT ENGINEER COMMISSIONER.

REPORT OF THE SUPERINTENDENT OF TREES AND PARKINGS

AUGUST 20, 1928.

SIR: I have the honor to submit the following report of the operations of the trees and parking department for the fiscal year ended June 30, 1928:

TREES PLANTED

There were 2,836 young trees planted in their permanent positions on the streets during the fiscal year. A special effort made during the year to extend the tree system along the streets in the suburbs and hitherto unplanted localities resulted in 2,381 being planted along many improved thoroughfares. Thirty-nine Norway maple trees were planted on both sides of Thirty-fourth Street NW., between Massachusetts Avenue and Garfield Street; 43 elm trees on both sides of Connecticut Avenue NW., between Dupont Circle and Florida Avenue; and 53 elm trees on the west side of Fifteenth Street NW., between I and K Streets; and both sides of Fifteenth Street NW., between K Street and Massachusetts Avenue, to replace the trees that were removed in connection with the work of widening these streets. Seven elm trees were planted on the east side of Nebraska Avenue NW., between Fessenden Street and Connecticut Avenue; 13 elm trees on the south side of Fessenden Street NW., between Nebraska Avenue and Thirty-eighth Street; and 12 elm trees on the west side of Wisconsin Avenue NW., between River Road and Nebraska Avenue to replace the trees that were removed in connection with the work of installing a high water service. Five pin-oak trees were planted on the north side of E Street NW., between Seventeenth and Eighteenth Streets; 66 elm trees on both sides of South Carolina Avenue SE., between Sixth and Eleventh Streets; 6 sycamore trees on the north side of South Carolina Avenue SE., between Eleventh and Twelfth Streets; 54 elm trees on both sides of Eleventh Street SE., between K and O Streets; 17 pin-oak trees on both sides of E Street SE., between Potomac Avenue and Nineteenth Street; 29 red-oak trees on both sides of G Street SE., between Eighth and Ninth Streets; and 13 sycamore trees on both sides of W Street NW., between Twelfth and Thirteenth Streets, to replace the trees removed because they were old and of a condemned variety. Ninety-eight trees were planted for the purpose of filling vacancies in the existing rows. These trees were all set at the curb line. No trees were planted in the parking between the inner edge of the sidewalk and the building line. The work of preparing the tree spaces for planting is vigorously prosecuted throughout such times of the year as it is found practicable to so distribute the force. Ordinarily, no holes are dug between May 1 and September 1, the men then being employed in cultivating young trees, mowing weeds, trimming and spraying trees.

The cost of planting 2,804 trees was paid from the appropriation for the trees and parking department. The cost of planting 32 trees was paid from the miscellaneous trust fund deposit of a private individual.

Owing to the fact that this department has occupied its present nurseries for less than 10 years, it has been impossible to produce trees in sufficient numbers to keep pace with the rapid growth of the city, but it is believed that if we are permitted to retain the present nurseries, that within five years they will produce the required number of trees to meet our demands. It was necessary to purchase 200 Norway maple trees to complete the spring planting. This department, however, finds it very difficult to obtain trees in sufficient numbers from the various nurseries suitable to transplant to their

permanent positions on the streets. The sum of \$20,504.40 was expended for labor and materials for tree planting along the streets during the year.

TREES REMOVED

A total of 1,620 trees were removed during the year for various reasons. Of these 124 were decayed and dangerous, 4 condemned varieties, 4 were to relieve excessive shade, 81 because they interfered with parking improvements, 249 for street improvements, 34 for driveways, 1 to accommodate vault, 96 for alley improvements, 20 were destroyed by automobiles, 44 were destroyed by storms, 7 interfered with vehicular traffic, 2 interfered with entrances to buildings, 2 because of close proximity to buildings, 7 interfered with building operations, 7 interfered with street lamps, 1 interfered with electric wires, 5 interfered with the proper development of curb trees, 10 interfered with the construction of sewers, and 31 interfered with the construction of water mains. It was ascertained that 128 were killed by illuminating gas, 19 by salt water, 81 by abnormal moisture, 31 by being filled around, 12 by being girdled, 24 by drought, 3 by insects, 9 by oil, 1 by fire, 27 by root mutilation, and the deaths of 556 were unexplained. Of the total number removed 1,394 stood at the curb line, 138 in the parking, 30 in the sidewalk, 36 in alleys, 21 in roadways, and 1 from private property because of its dangerous condition.

The cost of removing 1,221 trees was paid from the appropriation for this division, 296 from the appropriations for other departments, and 75 from whole-cost deposits. Permission to remove 28 trees was granted private individuals. The cost of removing the trees paid from the trees and parking department appropriation amounted to \$8,788.27.

NURSERIES

The Fort Dupont and Poplar Point nurseries are well stocked with small trees of the varieties considered best for street planting. It will be necessary to purchase from 1,500 to 2,000 trees for street planting during the fiscal year 1929. The young trees in the nursery rows are doing well and it is believed that in a few years these nurseries will produce all trees necessary to take care of the street planting.

This department transplanted 1,881 Norway maple, 176 red oak, 72 pin oak, 362 sycamore, 1,113 sycamore maple, 185 white oak, 432 sugar maple, and 946 gingko seedlings to the nursery rows at Fort Dupont nursery, and 2,192 elm, 1,323 sugar maple, and 1,793 sycamore maple seedlings to the nursery rows at Poplar Point nursery last spring. It will be necessary to cultivate and prune these trees each year in order to have healthy specimens at the time they are transplanted from the nursery rows to their permanent position along the streets. Several years must elapse after a seedling has been placed in the nursery row before it is suitable to be transferred to the street. The sum of \$8,307.86 was expended for labor, teams, fertilizer, etc., for nursery work, and an additional sum of \$1,169.76 was spent for the employment of a night watchman at the Poplar Point nursery.

TRIMMING

Only a small amount of systematic trimming was undertaken during the year, but considerable attention was given by two small forces of men to many individual requests for trimming trees possessing objectionable or dangerous limbs and low limbs on young trees that seriously interfered with pedestrians and vehicular traffic. The request for miscellaneous trimming continues to show a steady increase each year, and during the last quarter of the year it was impossible to comply with all of the requests as promptly as the public desired. A total of 10,593 trees were trimmed during the year at a cost of \$11,093.10.

In addition to the work performed on the individual requests for trimming, the same force attended to the miscellaneous casualties to trees and tree boxes reported by the Police Department. This casualty work is quite expensive due to its scattered nature. This work was performed at a total cost of \$804.62.

The sum of \$1,244.03 was expended in removing broken limbs, trees, etc. from the streets caused by storms.

TREES SPRAYED

The trees of this city suffer each year from the attacks of insects, principally the elm-leaf beetle, the tussock moth, and the fall webworm. The insects mentioned make their appearance annually, but no serious damage is done, due to spraying. Solutions of arsenate of lead are used, and this has proved to be the most efficient method of dealing with leaf-destroying insects, since it poisons their food supply. This office sprayed 102,030 trees during the year for the extermination of leaf-eating insects.

This work was performed at a total cost of \$6,899.84. This amount includes the sum of \$1,297.16 for arsenate of lead that was purchased during the fiscal year 1927. The amount expended from the appropriation for 1928 was \$5,602.68.

In addition to the above spraying it was found necessary to spray 850 pin oak trees along the streets with oil for the extermination of obscure scale. This work was performed at a cost of \$198.97.

CULTIVATING YOUNG TREES AND MOWING PARKINGS

The cultivation of young trees is absolutely necessary to insure good growth in young specimens, allowing them to derive the fullest benefit from rainfall. The value of cultivating young trees is not fully appreciated. It is not only beneficial to the young tree, but also destroys a rank growth of weeds that would otherwise spring up around them, and thus give the tree space an unsightly appearance. The keeping of the ground loose allows air to reach the roots, and renders more available the plant food the soil contains, and prevents the rapid evaporation of moisture.

A total of 11,475 young trees were cultivated during the year at a total cost of \$1,832.59.

The necessity being recognized to rid the city of as many weeds as possible, it became necessary for the department to mow many uninclosed public parkings throughout the city. This work was performed at a total cost of \$4,250.26. The sum of \$43.67 was spent in labor and team hire in connection with the trimming of hedges and mowing grass on reservations under the jurisdiction of the commissioners.

TREE SURGERY

Cavities in 41 elms, 1 sugar maple, and 140 linden trees standing at the curb line and 56 linden trees standing in the parking were treated and filled with cement. The sum of \$1,638.65 was expended for labor and team hire on this work.

REGULATION OF TERRACES AND RETAINING WALLS

This office issued 735 permits affecting the grades of terraces in connection with building operations in the residential districts during the year. We are not having any trouble with the builders relative to the treatment of the public parking in front of new buildings. The parking along the streets in the recently built-up sections of the city present a uniform appearance. The height of 478 retaining walls to be constructed on public space was passed on by this office.

Summary

Curb trees on the streets at the close of the fiscal year 1927.....	105, 123
Net increase in curb trees during the fiscal year 1928.....	1, 442
Curb trees on the streets at the close of the fiscal year 1928....	106, 565

Very respectfully,

C. LANHAM,
Superintendent Trees and Parking.

To the ASSISTANT ENGINEER COMMISSIONER.

REPORT OF THE BOARD OF EXAMINERS OF STEAM ENGINEERS OF THE DISTRICT OF COLUMBIA

AUGUST 2, 1928.

GENTLEMEN: The board of examiners of steam engineers has the honor to submit to you their annual report for the year ended June 30, 1928.

The following table shows the work as it progressed each month:

	Meet-ings held	Appli-cants exam-ined	Appli-cants ap-proved	Appli-cants not com-petent	First class	Sec-ond class	Third class	Gas-fired press ma-chine	Special class	Inter-nal com-bus-tion	Elec-tric motor-driven ma-chine	Stanley steam-er
1927												
July.....	5	16	12	4	2	1	2	0	2	5	0	0
August.....	4	16	10	6	1	0	3	3	0	1	1	1
September.....	5	32	19	13	0	2	4	9	0	3	1	0
October.....	4	17	11	6	0	0	4	4	1	0	2	0
November.....	4	14	8	6	1	1	1	5	0	0	0	0
December.....	5	25	18	7	1	0	1	16	0	0	0	0
1928												
January.....	4	34	29	5	2	1	3	22	1	0	0	0
February.....	4	35	18	17	1	1	4	8	3	1	0	0
March.....	5	56	47	9	1	0	2	33	3	8	0	0
April.....	4	75	69	6	0	0	2	64	1	2	0	0
May.....	4	68	60	8	1	2	0	45	4	2	6	0
June.....	4	59	48	11	3	5	5	29	5	1	0	0
Total.....	52	447	349	98	13	13	31	238	20	23	10	1

P. M. GREENLAW, *Chairman,*
Inspector of Steam Boilers.

H. BOESCH, *Secretary.*

T. S. TINCHER, *Member.*

To the COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

REPORT OF THE BOARD FOR THE CONDEMNATION OF INSANITARY BUILDINGS

SEPTEMBER 1, 1928.

GENTLEMEN: We have the honor to submit the following report for the year ended June 30, 1928—buildings on which action was taken in response to notices served under the act creating the board for the condemnation of insanitary buildings during the year ended June 30, 1928.

	Examined	Condemned	Razed	Repaired	No action taken	Pending	Value of repairs
Buildings in streets.....	424	237	127	254	37	35	\$85,449
Buildings in alleys.....	127	94	39	29	18	12	1,500
Total.....	551	331	166	283	55	47	86,949

Buildings acted upon since creation of board to June 30, 1928

Buildings in streets:	
Examined.....	6,364
Condemned.....	3,476
Razed.....	2,517
Repaired.....	2,697
No action taken.....	1,044
Pending.....	35
Value of repairs.....	\$556,068

Buildings in alleys:	
Examined.....	5, 905
Condemned.....	2, 424
Razed.....	1, 209
Repaired.....	7, 722
No action taken.....	3, 310
Pending.....	12
Value of repairs.....	\$81, 805
Number of buildings taken down by board during year ended June 30, 1928.....	166
Number of board meetings held during the year ended June 30, 1928.....	5
Number of 20-day preliminary notices prepared and served.....	113
Number of condemnation orders served during year ended June 30, 1928.....	144
Number of miscellaneous visits made in connection with the examination, service of various notices, repairs being made to buildings, the demolishing and removal of buildings condemned by the board.....	2, 128
Number of boards of survey appointed to review condemned buildings.....	2
Number of buildings condemned and not removed owing to the lack of funds.....	47
Estimated number of people required to secure other living quarters through action of the board for the year ending June 30, 1928.....	1, 555
Estimated number of occupants of dilapidated and insanitary buildings benefited by repairs to buildings through action of the board during the year ended June 30, 1928.....	1, 415
Estimated value of repairs made to dilapidated and insanitary buildings during the year ended June 30, 1928.....	\$86, 949

Owing to recent decisions of the courts in several condemnation cases, the District government was required to pay for old dilapidated and insanitary buildings under the terms of section 14 of the act of Congress creating the board for the condemnation of insanitary buildings, which section is known as that granting the property owner the right of appeal.

We recommend that this section of the act be modified or amended as suggested by the inspector for the board and the corporation counsel. Such modification would enable the board to secure the removal of condemned building in a more expeditious manner.

The rights of both the District and the property owners have been carefully considered in the suggested revision and we believe the same to be fair and just to both parties.

D. A. DAVISON,
Major, Corps of Engineers, United States Army,
Assistant to the Engineer Commissioner,
 W. C. FOWLER, M. D.,
Health Officer,

JOHN W. OEHMANN,
Inspector of Buildings,

A. S. J. ATKINSON,
Inspector for the Board,
Board for the Condemnation of Insanitary Buildings
of the District of Columbia.

To the COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

